Applications of Industrial-Strength Business Intelligence

Seven Leading Applications of Business Intelligence Software
“"I can’t think of a more exciting time for business intelligence than today.""
TO OUR CURRENT AND PROSPECTIVE CUSTOMERS:

At MicroStrategy, we’re dedicated to helping organizations make better business decisions that drive performance improvements through pervasive access to better information by all personnel. As a recognized leader in business intelligence, we continue to set the pace of innovation in our industry.

We’ve assembled a team of experts from a variety of disciplines who are committed to our mission and who have bonded together to create world-class, relevant technology. This team has delivered a business intelligence architecture that serves as the standard for reporting, analysis, and monitoring for organizations worldwide.

The MicroStrategy architecture is selected by organizations with varying needs – from those starting with a single application to those deploying enterprise-wide. Organizations require the unique capabilities of MicroStrategy: scalability to thousands of users, scalability to terabytes of data, boardroom quality report presentation, and unconstrained analytical flexibility.

Those organizations who start small with MicroStrategy soon discover MicroStrategy's unparalleled power to report, analyze, and monitor information and go on to build additional corporate performance management applications. Today, we’re finding that many of these companies have fielded a wide variety of MicroStrategy-based business intelligence applications ranging from financial reporting to sales analysis to advanced transactional fraud detection and prevention. Our customers’ demands to better understand their operational data, to deliver higher quality insight information with greater frequency, and to gain competitive advantage by leveraging this insight have pushed our technology like no other in the market. On average, MicroStrategy's enterprise customers have multiple applications and over one thousand users.

We are honored to be able to serve our customers and are dedicated to providing products and services to ensure their long-term success. The following pages explore a few of the business intelligence applications enabled by our technology. While they represent only a subset of the applications that are being successfully constructed and deployed, we hope they convey the variety and richness of applications that can easily be built using the MicroStrategy Business Intelligence Platform.

As you read on, we trust you’ll agree that there is no more exciting time in the history of business intelligence than today.

Thank you for your support.

MICHAEL J. SAYLOR,
CHAIRMAN OF THE BOARD AND
CHIEF EXECUTIVE OFFICER,
MICROSTRATEGY INCORPORATED
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>4</td>
</tr>
<tr>
<td>Industry Presence</td>
<td>11</td>
</tr>
<tr>
<td>Reporting and Analysis Applications</td>
<td>27</td>
</tr>
<tr>
<td>Finance</td>
<td>28</td>
</tr>
<tr>
<td>Human Resources</td>
<td>36</td>
</tr>
<tr>
<td>Sales Forecast</td>
<td>44</td>
</tr>
<tr>
<td>Customer Relationship Management</td>
<td>50</td>
</tr>
<tr>
<td>Product Sales</td>
<td>60</td>
</tr>
<tr>
<td>Supply Chain and Operations</td>
<td>68</td>
</tr>
<tr>
<td>Web Site Analysis</td>
<td>78</td>
</tr>
<tr>
<td>Index</td>
<td>84</td>
</tr>
</tbody>
</table>
WHAT IS BUSINESS INTELLIGENCE?
Business intelligence (BI) software allows companies to tap into their many databases and deliver easy-to-comprehend insights to employees, management, and business partners.

Business intelligence software is already being used by thousands of companies to find new revenue opportunities, reduce costs, reallocate resources, and improve operational efficiency.

THE MICROSTRATEGY MISSION:
HELPING BUSINESSES MAKE BETTER DECISIONS EVERY DAY
Our mission is to allow every business person to make more informed decisions by providing them timely, relevant, and accurate answers to their business questions.

To achieve this mission, we have built the best business intelligence software in the world. MicroStrategy software provides analytical insights in a manner that business people can easily digest, ranging from intuitive, graphical dashboards to highly formatted operational reports.

We meticulously engineer our software to guarantee its reliability, scalability, security, and ease of administration for organizations of all sizes.

UNIFIED REPORTING, ANALYSIS, AND MONITORING
MicroStrategy offers an unprecedented range of reporting, analyzing, and monitoring capabilities to allow users to make better business decisions every day.

MicroStrategy reporting delivers detailed data on current and historical performance to users across the enterprise. MicroStrategy’s intuitive user interface and Web reporting allows businesses to deliver insight to everyone for better decision making, every day.

MicroStrategy provides detailed insight into business so that managers can uncover the causes of performance problems, identify opportunities, and predict results. Users leverage MicroStrategy’s advanced analysis to reveal reasons for performance peaks or aberrations.

Monitor Corporate Performance at All Levels and in Real-Time.
MicroStrategy provides monitoring technology to constantly track business metrics. Companies use their scorecards and dashboards to create actionable information and alerts about ongoing business activity.
BUSINESS INTELLIGENCE
PERFORMANCE IMPROVEMENT
Companies need the full cycle of business performance insight to achieve improved corporate performance. The iterative and ongoing cycle of decision making is based on reporting on key metrics, rigorously analyzing data, and monitoring key indicators. This complete business analysis cycle enables users to refine how they manage their business units and the entire organization.

INTEGRATING REPORTING AND ANALYSIS
MicroStrategy is the first and only business intelligence architecture to unify reporting, analysis, and real-time monitoring into one seamless experience for the business user, into one efficient and scalable architecture for the IT professional, and into one economical and extensible utility for the CIO.

“We’re excited about the efficiencies we’re realizing by standardizing on MicroStrategy for enterprise monitoring, reporting, and analysis,” said Raymond Appel, Information Technology Manager at Oakwood Homes.

Business users rely on MicroStrategy software at every step in the cycle of corporate performance improvement. Users review operational reports, move into seamless analysis of root causes, and are alerted to important changes via scorecards and e-mail alerts. At any step, users can create different views of the data, explore anywhere in the database, and change their focus to monitor other KPIs for continuous performance improvement.
“The fact that MicroStrategy was rated number one in customer loyalty for the third year in a row is a remarkable achievement,” said Nigel Pendse, author of The OLAP Survey 6. “The fact that no other product has achieved such consistency suggests that many of MicroStrategy’s customers are fiercely loyal and see no alternative to the product.”

**MicroStrategy Customers Are Most Loyal**

Successful organizations across all industries choose MicroStrategy technology to conquer their BI challenges.

Once again, MicroStrategy has outperformed the competition in The OLAP Survey 6, an annual real-world market survey. The OLAP Surveys are the largest independent surveys of the BI market space and products, and are conducted annually by Survey.com.

For three consecutive years, MicroStrategy had the highest customer loyalty of any BI vendor in the entire survey. MicroStrategy’s leading Overall Customer Loyalty Score of 83.3% is nearly 50% higher than the Overall Customer Loyalty Score of 56.4% for Business Objects, which scored tenth in the overall survey in this area.

**Majority Select MicroStrategy As Their Enterprise Standard**

According to The OLAP Survey 6, MicroStrategy was the top BI product selected by customers asked to choose one product for BI standardization. When respondents were asked why they selected MicroStrategy, they cited product features, its ability to support large numbers of concurrent users, Web deployability, and multi-platform support.

MicroStrategy has been a consistent leader in The OLAP Survey, sometimes by a wide margin, in multiple categories with the gap between MicroStrategy’s leadership position and other vendors growing at an increasing rate.

> “MicroStrategy, which has concentrated on a single product architecture and has grown organically, came out on top yet again,” explains Nigel Pendse, the author of The OLAP Survey 6.
MICROSTRATEGY SOFTWARE: INTEGRATING BUSINESS REPORTING AND ANALYSIS

The MicroStrategy platform was designed to address the most pressing challenge in BI today. That challenge is to help companies empower their personnel and business partners to make better business decisions every day.

With MicroStrategy, companies no longer need numerous distinct products from different vendors to provide reporting, analysis, and performance monitoring. With a scalable architecture and a single metadata, users can navigate seamlessly from scorecards and dashboards to reports and analysis without being forced to open and close multiple BI tools and navigate dissimilar interfaces.

MicroStrategy 8 has radically reduced the time to design and deploy new reports with what-you-see-is-what-you-get (WYISIWYG) report design. MicroStrategy 8 broadens the universe of data sources that business users can access for their reporting and analysis activity. Business users can directly query data stored in financial, human resources, supply chain, and other operations systems without having to first move this data into a data mart or data cube.

MICROSTRATEGY DYNAMIC ENTERPRISE DASHBOARDS

MicroStrategy Dynamic Enterprise Dashboards deliver a new caliber of information dashboards. MicroStrategy combined state-of-the-art data visualization and interactivity with its industrial-strength business intelligence platform to create dashboards that yield greater business insight and are usable by more people than ever before.

Dashboards provide easy-to-use access to enterprise data and help organizations track performance and optimize decision making. At-a-glance, executives, managers, and business users can immediately understand their organization’s health through a range of insightful data visualizations, such as key performance indicators (KPIs), tables, graphs, trend indicators, gauges, heat maps, and many more. MicroStrategy dashboards incorporate Adobe® Flash® providing a wide range of information views and increased information exploration options. Using MicroStrategy’s zero-footprint WYISIWYG Web interface, business users can create dashboards using simple drag and drop actions, increasing the use and adoption of business intelligence systems.

“We are impressed with the rich platform of MicroStrategy 8.1, especially the new graphs, panels, and selectors,” said Jordan Silvergleid, Managing Director at the Advisory Board Company. “MicroStrategy Dynamic Enterprise Dashboards are truly engaging and can be intuitively designed, built, and deployed with ease over the Web.”

“WeMicroStrategy Dynamic Enterprise Dashboards represent a new caliber of dashboard,” said Ryan Osterhues, MicroStrategy Administrator at PETCO Animal Supplies, Inc.

“WeMicroStrategy 8.1, there are many ways in which our data can be visualized and displayed to our decision makers.”
MicroStrategy is the Industry Leader in Data Scalability

During the preceding decade, companies have experienced an explosion in the volume and scope of data they generate. The advent of a myriad of systems — ERP, CRM, Web site, sales force automation, SEC compliance, supply chain, inventory, POS, and even RFID — has contributed to this massive influx of data.

An enterprise BI architecture must be able to access the full depth and breadth of all of these databases to be truly effective for the enterprise. MicroStrategy’s ROLAP architecture was designed to access the largest databases with the highest performance.

**SELECT CUSTOMER DEPLOYMENTS WITH LARGE DATA SCALE**

<table>
<thead>
<tr>
<th>&lt;5 Terabytes</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dick’s Sporting Goods</td>
<td>Retail</td>
<td>2 TB</td>
<td>Oracle</td>
<td>300 Users</td>
</tr>
<tr>
<td>CSK Auto Corporation</td>
<td>Retail</td>
<td>2 TB</td>
<td>AS400</td>
<td>300 Users</td>
</tr>
<tr>
<td>The First American</td>
<td>Financial Services</td>
<td>3.5 TB</td>
<td>SQL Server</td>
<td>30,000 Users</td>
</tr>
<tr>
<td>Corporation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grange Insurance</td>
<td>Insurance</td>
<td>4 TB</td>
<td>DB2, SQL Server</td>
<td>350 Users</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5 – 20 Terabytes</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Express</td>
<td>Retail</td>
<td>8 TB</td>
<td>Netezza</td>
<td>10,000 Users</td>
</tr>
<tr>
<td>Limited Brands</td>
<td>Retail</td>
<td>8 TB</td>
<td>Teradata</td>
<td>1,000 Users</td>
</tr>
<tr>
<td>Ahold</td>
<td>Retail</td>
<td>18 TB</td>
<td>Oracle</td>
<td>3,000 Users</td>
</tr>
<tr>
<td>Lowe’s Companies</td>
<td>Retail</td>
<td>20 TB</td>
<td>Teradata</td>
<td>3,500 Users</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>&gt;20 Terabytes</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>eBay</td>
<td>Retail</td>
<td>&gt;25 TB</td>
<td>Teradata</td>
<td>2,800 Users</td>
</tr>
<tr>
<td>Catalina Marketing</td>
<td>Media</td>
<td>28 TB</td>
<td>Netezza</td>
<td>350 Users</td>
</tr>
<tr>
<td>Corporation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>METRO Group</td>
<td>Retail</td>
<td>34 TB</td>
<td>Teradata</td>
<td>2,500 Users</td>
</tr>
<tr>
<td>Nationwide</td>
<td>Insurance</td>
<td>44 TB</td>
<td>Teradata</td>
<td>20,000 Users</td>
</tr>
<tr>
<td>U.S. Postal Service</td>
<td>Government</td>
<td>60 TB</td>
<td>Teradata</td>
<td>50,000 Users</td>
</tr>
</tbody>
</table>

*Data collected as of August 2007. Data sizes are expected to increase further.*
SCALABILITY TO THOUSANDS OF USERS
An enterprise BI architecture must be able to support tens of thousands of users, all of whom can interactively access the same reports, scorecards, and analyses. While many BI vendors cite customers with large user populations, they do not mention these high numbers are really just aggregations of many small isolated BI applications, or that their implementations require massive server farms.

MicroStrategy delivers full 64-bit BI, allowing it to deliver the most user sessions on the fewest servers. And, MicroStrategy is one of the few with this technology to support large user scalability. MicroStrategy customers routinely run single BI applications to thousands of people through the interface of their choice, using just a few servers, and with high performance.

CUSTOMER DEPLOYMENTS WITH LARGE USER SCALE

MicroStrategy: Best in Business Intelligence
Industry Presence

CHOSEN AS THE BI STANDARD BY GLOBAL LEADERS

Many of the leading FORTUNE® Global 500 companies rely on MicroStrategy for their business intelligence solutions.

MicroStrategy customers represent:

- 9 of the top 10 global pharmaceutical companies
- 8 of the top 10 global telecommunications companies
- 8 of the top 10 global healthcare companies
- 7 of the top 10 global retailers
- 7 of the top 10 global commercial banks
- 7 of the top 10 global manufacturing companies
- 5 of the top 7 global consumer goods companies
- 4 of the top 5 U.S. diversified financial services companies
- 4 of the top 5 global insurers
- Federal, State, and Local Government agencies

Indeed, world-class companies across all industries depend on MicroStrategy to improve corporate performance and streamline operations. MicroStrategy customers are making thousands of better business decisions every day as they deploy MicroStrategy to their business users, customers, and suppliers.

The following pages present snapshots of MicroStrategy success across many industries, including Retail, Financial Services, Telecommunications, Pharmaceutical, Healthcare, Consumer Goods and Manufacturing, and Insurance. The MicroStrategy team has amassed in-depth experience in deploying successful applications for customers across each of these industries.
### Retail Customers Include:

- Aeropostale
- Ahold
- American Signature, Inc.
- Applebee's International Inc.
- Barnesandnoble.com
- Belk
- Boots The Chemists
- Borders Group, Inc.
- Boscov's Department Stores
- Charming Shoppes
- Circuit City Stores
- Comet
- The Container Store
- Corporate Express
- CSK Auto Corporation
- Darden Restaurants
- David's Bridal
- Dick's Sporting Goods
- eBay
- Eckerd
- Faith Shoes
- Food Lion
- GUESS?, Inc.
- Hannaford Bros. Co.
- Hard Rock Cafe
- Harris Teeter
- HE Butt Grocery Company
- Hudson's Bay Company
- KB Toys, Inc.
- Limited Brands
- Liz Claiborne
- Lloydspharmacy
- Lowe's Companies, Inc.
- Meijer Stores
- METRO Group
- Michaels Stores
- Micro Center
- Office Depot
- O'Reilly Automotive
- Pacific Sunwear
- Petco Animal Supplies
- PF Chang's
- Priceline.com
- Raley's
- Roundy's Supermarkets, Inc.
- Shoppers Drug Mart Inc.
- Starbucks Corporation
- Victoria's Secret, Inc.
- Virgin Retail
- Yahoo!

---

### Snapshot of MicroStrategy Technology at Work in the Retail Industry:

<table>
<thead>
<tr>
<th>CORPORATE EXPRESS</th>
<th>LIMITED BRANDS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APPLICATIONS</strong></td>
<td>Unlimited Access to Insight</td>
</tr>
<tr>
<td>Market Basket Analysis, Marketing Analysis, Predictive Analytics, Sales Analysis</td>
<td>Category Management, Human Resources, Inventory Management, Marketing Analysis, Merchandise Management, Store Operations</td>
</tr>
<tr>
<td><strong>DEPLOYMENT</strong></td>
<td>Database: Teradata DB Size: 20 Terabytes Users: 3,500 active employees and vendors</td>
</tr>
<tr>
<td><strong>Corporate Express</strong></td>
<td>Interface: Web, E-mail</td>
</tr>
<tr>
<td></td>
<td><strong>Architecture</strong>: Intranet, Extranet</td>
</tr>
<tr>
<td></td>
<td><strong>Liz Claiborne, Inc.</strong></td>
</tr>
<tr>
<td><strong>APPLICATIONS</strong></td>
<td>Uncovering Revenue Opportunities</td>
</tr>
<tr>
<td>Category Management, Inventory Management, Merchandise Management, Planning, Sales Analysis, Store Operations</td>
<td><strong>APPLICATIONS</strong></td>
</tr>
<tr>
<td><strong>DEPLOYMENT</strong></td>
<td>Database: Oracle Users: Over 250 Liz Claiborne managers and analysts <strong>Architecture</strong>: Intranet</td>
</tr>
<tr>
<td><strong>Limited Brands</strong></td>
<td><strong>Deployment</strong>: Database: Teradata DB Size: 2 Terabytes Users: 1,000</td>
</tr>
<tr>
<td></td>
<td><strong>Interface</strong>: Desktop and Web <strong>Architecture</strong>: Intranet</td>
</tr>
<tr>
<td></td>
<td><strong>Lowe’s Companies</strong></td>
</tr>
<tr>
<td><strong>APPLICATIONS</strong></td>
<td>Building Strong Revenues</td>
</tr>
<tr>
<td>Inventory Management, Merchandise Management, Merchandising and Executives Dashboards, Operations Management, Supply Chain Management</td>
<td><strong>APPLICATIONS</strong></td>
</tr>
<tr>
<td><strong>DEPLOYMENT</strong></td>
<td>Database: Teradata DB Size: 20 Terabytes Users: 3,500 active employees and vendors <strong>Interface</strong>: Web, E-mail</td>
</tr>
<tr>
<td><strong>Lowe's</strong></td>
<td><strong>Architecture</strong>: Intranet, Extranet</td>
</tr>
</tbody>
</table>

A customer since 2000, Liz Claiborne's employees are analyzing financial, sales, and inventory data across 30,000 points of sale worldwide — department stores, specialty stores, and catalog/internet — to uncover revenue opportunities.

---

### Retail Segments:

- Apparel
- Department Stores
- Discount Drugstores
- Discount Retailers
- Electronics
- Home Improvement
- Specialty Grocery
- Specialty Retailers
“As a result of using the MicroStrategy platform, Lowe’s is realizing significant benefits through improved merchandising decisions, more timely responses to information requests, cost reduction initiatives, enhanced employee productivity, and better service to our customers.”

Steve Stone, Senior Vice President and Chief Information Officer, Lowe’s Companies

Customer Applications

<table>
<thead>
<tr>
<th>Category Management</th>
<th>Market Basket</th>
<th>Merchandise Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assortment Optimization</td>
<td>Attachment Rates</td>
<td>Department Contribution</td>
</tr>
<tr>
<td>Category Contribution</td>
<td>Basket-Register Correlation</td>
<td>Hot Item Report</td>
</tr>
<tr>
<td>Category Scorecards</td>
<td>Brand Switching</td>
<td>In Stock %</td>
</tr>
<tr>
<td>Item Definitions</td>
<td>Core Item Frequency</td>
<td>Inventory Turns</td>
</tr>
<tr>
<td>Market Comparison</td>
<td>Core Items</td>
<td>Lineal Feet</td>
</tr>
<tr>
<td>Pricing Modules</td>
<td>Customer Loyalty</td>
<td>Mark Down %</td>
</tr>
<tr>
<td>Role Analysis</td>
<td>Demographic Baskets</td>
<td>Pull-Through</td>
</tr>
<tr>
<td>Season Changeover</td>
<td>In-Basket Price</td>
<td>Reallocations</td>
</tr>
<tr>
<td>Share of Shelf</td>
<td>Items per Basket</td>
<td>Seasonal Buying</td>
</tr>
<tr>
<td>SKU Rationalization</td>
<td>Revenue Contribution</td>
<td>Sell-Through</td>
</tr>
<tr>
<td>Vendor Performance</td>
<td>Shopper Penetration</td>
<td>Weeks of Supply</td>
</tr>
</tbody>
</table>

| Loss Prevention              | Marketing Analysis                 | Store Operations                  |
| Backorders                   | Ad Blocks                           | Asset Turnover                    |
| Cancels                      | Channel Share                       | Competitor Stores                 |
| Distribution Shrink          | Coupon Distribution                 | Comp Store Sales                  |
| Hot Customer                 | End-Cap Efficiency                  | Front Store Sales                 |
| Hot Staff                    | Feature vs. Display                 | Inventory Turnover                |
| Hot Stores                   | Grand Openings                      | Labor Cost Analysis               |
| Markdowns                    | Marketing Areas                     | Reallocation / DSD                |
| Natural Losses               | Market Share                        | Register Usage Analysis           |
| Return Rates                 | Price Points                        | ROA                               |
| Shrink Analysis              | Promo Lift                          | Sales & Margin                    |
| Vendor Rationalization       | Seasonal Events                     | Sales / Square Foot               |
Snapshot of MicroStrategy Technology at Work in the Financial Services Industry:

**THE FIRST AMERICAN CORPORATION**

**Enterprises Reporting and Executive Dashboards**

**APPLICATIONS**
- Analytical Reporting, Business Performance, Compliance Reporting, Enterprise Reporting, Extranet Reporting, Operational Reporting

**DEPLOYMENT**
- Database: SQL Server
- DB Size: 3.5 Terabytes
- Users: 30,000 total
- Architecture: Intranet, Extranet

MicroStrategy fuels a variety of applications, including business performance dashboards for executives, operational reporting for channel vendor management, and compliance reporting for partner lending institutions.

**H&R BLOCK**

**Providing Highly Secure Access to Business Information**

**APPLICATIONS**
- Customer Analysis, Employee Performance

**DEPLOYMENT**
- Database: Oracle
- DB Size: 1 Terabyte
- Users: 1,000 financial advisors and analysts
- Architecture: Intranet

MicroStrategy provides highly secure access to business information for its 1,000 financial advisors by e-mailing 5,000 reports containing customer activity data on a weekly basis. Financial analysts use MicroStrategy to analyze employee performance for annual and quarterly achievement recognition.

**LA CAIXA**

**Investing in Innovative Technology**

**APPLICATIONS**
- Cash Flow, Credit Card Analysis, Electronic Banking and Online Services, Marketing Analysis, Product Profitability, Risk Management, Web Click Stream Analysis

**DEPLOYMENT**
- Database: Oracle, DB2
- DB Size: 1.7 Terabytes
- Users: 3,000 accessing monthly Mgmt. Info., 180 business analysts accessing >50 projects
- Interface: Desktop, Web
- Architecture: Intranet

La Caixa currently has more than 50 applications dependent on MicroStrategy technology.

**TRX INC.**

**Deploying Self-Service Extranet Reporting to Thousands of Users in Four Months**

**APPLICATIONS**
- Customer Relationship Management, Financial Analysis, Fraud Profiling, and Risk Analysis

**DEPLOYMENT**
- Database: DB2 UDB EEE
- DB Size: >1.5 Terabytes
- Users: >10,000
- Interface: Web
- Architecture: Extranet
- Operating System: I-Server Universal and Web Universal running on IBM AIX

The joint MicroStrategy/TRX solution at one of the top five financial institutions is enabling multinational commercial clients to report and analyze charge card and travel data from 29 countries and in 11 languages.

**FINANCIAL SERVICES SEGMENTS:** Asset Management Brokerage, Consumer Credit, Debt and Equity, Individual/Institutional Investment Banking, Retail Banking
“We've selected MicroStrategy over competing products because of its outstanding scalability for large numbers of users and its superior capability to generate user-friendly reports with highly detailed analysis of granular-level data.”

Gus Tepper, Vice President of Software Development, Interactive Division, First American Corporation

## Customer Applications

<table>
<thead>
<tr>
<th>Advisory Services</th>
<th>Fraud Profiling and Risk Analysis</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Management</td>
<td>Claims Analysis</td>
<td>Branch Office Scorecards</td>
</tr>
<tr>
<td>Confirmation Alerts</td>
<td>Credit Risk Management</td>
<td>Call Center Management</td>
</tr>
<tr>
<td>Customer Alerts</td>
<td>Customer Risk Scoring</td>
<td>Channel Management</td>
</tr>
<tr>
<td>Customer Profitability Analysis</td>
<td>Exceptions Risk Management</td>
<td>Commission Reporting</td>
</tr>
<tr>
<td>Customer Statements</td>
<td>Exposure Reporting</td>
<td>Customer Statements</td>
</tr>
<tr>
<td>Portfolio Analysis</td>
<td>Fraud Risk Management</td>
<td>Financial Reporting</td>
</tr>
<tr>
<td>Portfolio Risk Analysis</td>
<td>Hedge Slippage Alerts</td>
<td>Swap Mark to Markets</td>
</tr>
<tr>
<td>Product Introduction</td>
<td>Index Performance Alerts</td>
<td>Trade Confirmations</td>
</tr>
<tr>
<td>Research Distribution</td>
<td>Prepayment Risk</td>
<td>Trade Floor Reporting</td>
</tr>
<tr>
<td>Tax Notification</td>
<td>Underwriting Scorecards</td>
<td>Trade Settlement Alerts</td>
</tr>
<tr>
<td>What-if Analysis</td>
<td>Value At Risk Analysis</td>
<td>Wire Transfer Alerts</td>
</tr>
</tbody>
</table>

## Financial Analysis and Compliance

<table>
<thead>
<tr>
<th>Marketing</th>
<th>Sales and Trading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaign Analysis</td>
<td>Client Loyalty Analysis</td>
</tr>
<tr>
<td>Channel Efficiency</td>
<td>FAS 133 Analysis</td>
</tr>
<tr>
<td>Cross-Sell Analysis</td>
<td>Financial / P&amp;L Reporting</td>
</tr>
<tr>
<td>Customer Analysis</td>
<td>Hedge Slippage Alerts</td>
</tr>
<tr>
<td>Customer Loyalty Analysis</td>
<td>Market Data Analysis</td>
</tr>
<tr>
<td>Market Basket Analysis</td>
<td>Portfolio Analysis</td>
</tr>
<tr>
<td>Marketing Segmentation</td>
<td>Position Reporting</td>
</tr>
<tr>
<td>Product Management</td>
<td>Refinance Risk Analysis</td>
</tr>
<tr>
<td>Product Profitability Analysis</td>
<td>Research Distribution</td>
</tr>
<tr>
<td>Up-Sell Analysis</td>
<td>Trade Floor Reporting</td>
</tr>
<tr>
<td>Web Traffic Analysis</td>
<td>Transaction Volume Analysis</td>
</tr>
</tbody>
</table>
### Charter Communications, Inc.

**Giving Users the Ability to Act on Valuable Customer Case, Billing, Sales, and Marketing Data**

**APPLICATIONS**
- Billing Analysis, Customer Analysis,
- Marketing Analysis, Sales Analysis

**DEPLOYMENT**
- **Database:** Oracle
- **Users:** 1,500
- **Interface:** Web
- **Architecture:** Intranet

Charter uses MicroStrategy for reporting on and analyzing key business areas, including customer care, billing, sales, marketing, and technical operations. MicroStrategy provides Charter personnel with a platform for strategic, internal intelligence gathering and gives users easy access to information about many of Charter’s critical business functions.

### Sprint

**Reaching a Large User Community Through Enterprise-Wide Business Intelligence**

**APPLICATIONS**
- Campaign Management, Customer Analysis / CRM,
- Enterprise Reporting, Financial Reporting and Analysis,
- Human Resources, Marketing Analysis, Sales Analysis

**DEPLOYMENT**
- **Database:** Teradata, Oracle, and Informix
- **Users:** 10,000
- **Interface:** Desktop and Web
- **Architecture:** Intranet

More than 10,000 Sprint employees use MicroStrategy for 30 critical BI applications across the enterprise.

### TelePhia

**Deploying Dashboards, Scorecards, and Interactive Reports for Multiple BI Applications**

**APPLICATIONS**
- Advertising Effectiveness, Content Audience, Customer Satisfaction, Device Share, Network Quality, Revenue Share, Subscriber Share

**DEPLOYMENT**
- **Database:** Teradata
- **DB Size:** <250 Gigabytes
- **Users:** 2,000
- **Interface:** Web
- **Architecture:** Extranet

MicroStrategy anchors multiple business intelligence applications that provide Telephia customers with critical information. Telephia is using dashboards, scorecards, and interactive reports to help thousands in the mobile communications industry understand performance data.

### Verizon

**Improving Operations and Customer Relations**

**APPLICATIONS**
- Billings/Claims/AR Analysis, Dispatch/Service Calls,
- Operational Metrics, Procurement Analysis,
- Regulatory Reporting

**DEPLOYMENT**
- **Database:** Oracle and DB2
- **Users:** 10,000 users across 14 different projects
- **Interface:** Web Analyst, NCS for a few projects
- **Architecture:** Intranet

MicroStrategy supports approximately 14 distinct BI applications across Verizon.

### TELCO SEGMENTS

Broadband, DSL, Internet, Large Business, Small Business, Residential, Wireless
“We’re pleased that MicroStrategy’s unique infrastructure and exceptional capabilities have scaled to our ever-growing requirements, satisfying the business requirements of our widespread end-user community.”

John Bentley, Manager of Systems Development, Sprint

Customer Applications

<table>
<thead>
<tr>
<th>Customer Care and Analytical CRM</th>
<th>Fraud Management and Call Center</th>
<th>Network Optimization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Churn Analysis</td>
<td>Call Times</td>
<td>Call Routing</td>
</tr>
<tr>
<td>Customer Inquiry</td>
<td>Call Volumes</td>
<td>Capacity</td>
</tr>
<tr>
<td>Customer Plan Migration</td>
<td>Capacity Forecasting</td>
<td>Capacity Analysis</td>
</tr>
<tr>
<td>Customer Profitability</td>
<td>Complaint Logs</td>
<td>Failure Notification</td>
</tr>
<tr>
<td>Customer Scorecards</td>
<td>Corrective Action &amp; Notification</td>
<td>Network Planning</td>
</tr>
<tr>
<td>Dispatch Request</td>
<td>Discounting</td>
<td>Network Utilization</td>
</tr>
<tr>
<td>Preferences and Permissions</td>
<td>Employee Productivity</td>
<td>Quality of Service</td>
</tr>
<tr>
<td>Service Call Monitoring</td>
<td>Fraud Analysis</td>
<td>Switch Operations</td>
</tr>
<tr>
<td>Service Complaints</td>
<td>Pricing Models</td>
<td>Switch Utilization</td>
</tr>
<tr>
<td>Service Level Agreement (SLA)</td>
<td>Product Affinity/Bundling</td>
<td>Traffic Analysis</td>
</tr>
<tr>
<td>Trouble Ticket</td>
<td>Response Times</td>
<td>Volume Management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financial Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access and Line Charges</td>
</tr>
<tr>
<td>AR/AP Reporting</td>
</tr>
<tr>
<td>Budget Variance Analysis</td>
</tr>
<tr>
<td>Collections Reporting</td>
</tr>
<tr>
<td>Contracts Reporting</td>
</tr>
<tr>
<td>Cost Analysis</td>
</tr>
<tr>
<td>Margin Analysis</td>
</tr>
<tr>
<td>P&amp;L Reporting</td>
</tr>
<tr>
<td>Revenue Reporting</td>
</tr>
<tr>
<td>Tariffs</td>
</tr>
<tr>
<td>Taxes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marketing Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel Efficiency</td>
</tr>
<tr>
<td>Cross-Sell Analysis</td>
</tr>
<tr>
<td>Customer Segmentation</td>
</tr>
<tr>
<td>Demographic Analysis</td>
</tr>
<tr>
<td>Loyalty Programs</td>
</tr>
<tr>
<td>Market Share</td>
</tr>
<tr>
<td>Next to Buy</td>
</tr>
<tr>
<td>Price Points</td>
</tr>
<tr>
<td>Promo Lift</td>
</tr>
<tr>
<td>Service History</td>
</tr>
<tr>
<td>Up-Sell Analysis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sales Analysis and Billing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account Balances</td>
</tr>
<tr>
<td>Commission Reporting</td>
</tr>
<tr>
<td>Customer Trends</td>
</tr>
<tr>
<td>EBPP / Intelligent Billing</td>
</tr>
<tr>
<td>Fraud</td>
</tr>
<tr>
<td>Product Affinity</td>
</tr>
<tr>
<td>Product Sales &amp; Trends</td>
</tr>
<tr>
<td>Quota Attainment</td>
</tr>
<tr>
<td>Sales Force Performance</td>
</tr>
<tr>
<td>Telemarketing</td>
</tr>
<tr>
<td>Utilization</td>
</tr>
</tbody>
</table>
AstraZeneca

Gaining Vital Market Insight and Market Share

APPLICATIONS
Financial Reporting, Market Share Analysis, Product Management

DEPLOYMENT
Database: Oracle  
DB Size: 1 Terabyte  
Users: 250 employees  
Interface: Web  
Architecture: Intranet

AstraZeneca relies on MicroStrategy software to distribute 70,000 reports within a 24-hour window each month to its employees.

Novartis

Maintaining a Healthy Business

APPLICATIONS
Marketing, Sales, Web Traffic Analysis

DEPLOYMENT
Database: SQL Server  
DB Size: 1 Terabyte  
Users: 150 Web users, including sales, marketing, and executives, and 500 e-mail recipients  
Interface: Desktop, Web, E-mail  
Architecture: Intranet, Proactive Information Delivery

MicroStrategy applications at Novartis Pharmaceuticals have already reduced the costs of corporate information systems by 50%.

Roche España

Personalizing Information for Enterprise Users

APPLICATIONS
Financial Reporting, Sales Analysis

DEPLOYMENT
Database: SQL Server  
DB Size: <250 Gigabytes  
Users: 300 sales representatives, marketing, production, and credit and collections employees  
Interface: Web, E-mail  
Architecture: Intranet, Proactive Information Delivery

Roche España employees rely on the MicroStrategy platform to receive daily personalized, relevant, and up-to-date information.

Sanofi-Aventis

Increasing Sales Effectiveness

APPLICATIONS
Contract Analysis, Customer Analysis, Sales Management

DEPLOYMENT
Database: Oracle  
DB Size: <1 Terabyte  
Users: 200 marketing, sales support, and field representatives  
Interface: Web, E-mail  
Architecture: Intranet, Proactive Information Delivery

The success of the MicroStrategy applications internally has prompted Sanofi-Aventis to extend their reach by distributing personalized and relevant business insight to customers and suppliers.

**PHARMACEUTICAL SEGMENTS:** Biotechnology, Chiral Chemistry, Consumer Radiopharmaceuticals/Contrasts Agents, Drug Delivery, Generic Drugs, Nutraceuticals, OTC, Vaccines
“With MicroStrategy, we will have a true enterprise view across our value chain, providing management with greater operational insights and actionable data to help us more effectively navigate through our dynamic industry. We have been highly productive using MicroStrategy for several years and found MicroStrategy’s single metadata and object reuse has reduced our administrative costs. MicroStrategy is a natural fit for our analytic reporting environment at the enterprise level.”

Thomas H. Murphy; Senior Vice President and Chief Information Officer, AmerisourceBergen

Customer Applications

Financial Analysis
Accounts Receivable Reporting
Budget Variance Analysis
Cash Flow Analysis
Payment and Collection Reporting

Formulary Tracking
Balanced Scorecards
Competitive Tracking
Formulary Adherence
Physician Prescribing Patterns
Promotion Effectiveness
Trend Analysis

Marketing Analysis
Campaign Analysis
Customer Loyalty Analysis
Customer Segmentation
Marketing Spending
New Product Launches
Preferences and Permissions
Pricing and Promotions
Promotional Lift
Service and Transaction History

Operations Management
Capacity Planning
Manufacturing Planning & Engineering
Materials Routing
Operations Procurement
Product Management
Quality Control
Supplier Analysis and Management
Yield Planning

Regulatory Management
Admittance Rates
Clinical Analysis
Clinical Trials
Noncompliance Alerts
Protocol Development

Sales Analysis
Buying Trends
Channel Analysis
Commission Reporting
Discounting
Key Profit Contributors
Orders and Shipments
Pricing Models
Revenue Goals
Sales Performance
Sales Trends
Snapshot of MicroStrategy Technology at Work in the Healthcare Industry:

**CENTERS FOR MEDICAID & MEDICARE SERVICES**
Managing the Effectiveness of Medicare
APPLICATIONS
Performance reporting for the Managed Medicare Program
DEPLOYMENT
Database: IBM DB2, Oracle  
Users: 200 – 300 users
Interface: Web, E-mail
Architecture: Intranet
CMS will conduct analysis on beneficiaries enrolled in the Medicare+Choice program to ensure correct payment rates, beneficiary status, and demographic analysis among other analytics.

**CVS CAREMARK**
Prescription Analysis Applications That Save Lives
APPLICATIONS
Prescription Tracking and Analysis, Risk Management
DEPLOYMENT
Database: Oracle  
DB Size: 10 Terabytes
Users: 3,850 clients
Interface: Web
Architecture: Intranet
The MicroStrategy applications at CVS Caremark make more than 1.5 billion prescription claims available to authorized clients via the Web.

**INGENIX**
Improving Customer Service
APPLICATIONS
Customer Relationship Management, Healthcare Reporting
DEPLOYMENT
Database: Oracle  
DB Size: 1.6 TB
Users: 20,000 corporate clients, pharmacies, laboratories, hospitals, insurers, and care providers
Interface: Web, E-mail
Architecture: Extranet, Proactive Information Delivery
MicroStrategy enables Ingenix to communicate important patient information directly with doctors, or insurance information directly to claims representatives for immediate action.

**PREMIER**
Improving the Quality of Patient Care
APPLICATIONS
Financial Reporting, Marketing Analysis, Patient Safety and Staffing, Resource Utilization
DEPLOYMENT
Database: Netezza  
DB Size: 250 GB – 1 TB
Users: 500 clients, including member hospitals, physicians, and healthcare professionals
Interface: Web
Architecture: Extranet
The MicroStrategy platform currently anchors 20 business intelligence applications at Premier.

**HEALTHCARE SEGMENTS:** Dental, Drugs & Medical Non-durables, Government, Home Health, Hospital Care, Mental Health Services, Nursing Home Services, Physician Services, Public Health, Public Research & Development, Vision
“Hospitals have a significant opportunity to improve performance through business intelligence. Our business intelligence membership programs — which include our distinctive business intelligence tools on MicroStrategy’s platform as well as our best practice research and domain expertise to drive ongoing improvement — really help our member hospitals reach and maintain the top tier of performance.”

Dennis Shin, Executive Director, The Advisory Board Company

Customer Applications

<table>
<thead>
<tr>
<th>Analytical CRM</th>
<th>Customer Care</th>
<th>Marketing Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Churn Analysis</td>
<td>Dispatch Request and Monitoring</td>
<td>Customer Segmentation</td>
</tr>
<tr>
<td>Customer Plan Migration</td>
<td>Questions Reporting</td>
<td>Demographic Analysis</td>
</tr>
<tr>
<td>Customer Profitability</td>
<td>Service Complaints</td>
<td>Loyalty Programs</td>
</tr>
<tr>
<td>Customer Scorecards</td>
<td>Service Level Agreement</td>
<td>Market Share by Patient,</td>
</tr>
<tr>
<td>Call Center Operations</td>
<td>(SLA) Reporting</td>
<td>Customer, Business</td>
</tr>
<tr>
<td>Call Times</td>
<td>Trouble Ticket Resolution</td>
<td>Physician Practices</td>
</tr>
<tr>
<td>Call Volumes</td>
<td>Financial Analysis</td>
<td>Preferences and Permissions</td>
</tr>
<tr>
<td>Complaint Logs</td>
<td>Accounts Receivable Reporting</td>
<td>Bundling</td>
</tr>
<tr>
<td>Employee Productivity</td>
<td>Budget Variance Analysis</td>
<td>Service &amp; Transaction History</td>
</tr>
<tr>
<td>Forecast Capacity and Staffing</td>
<td>Cash Flow Analysis</td>
<td>Protocol Development</td>
</tr>
<tr>
<td>Response Times</td>
<td>Payment and Collection</td>
<td>Clinical Outcomes</td>
</tr>
<tr>
<td></td>
<td>Reporting</td>
<td>Cost and Clinical Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost Effectiveness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inpatient Admission Rates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Patient Safety &amp; Staffing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Performance Reporting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Treatments</td>
</tr>
</tbody>
</table>

MicroStrategy: Best in Business Intelligence | 21
E.I. DUPONT DE NEMOURS & COMPANY

Integrating Data from Field Trials Conducted Around the World

APPLICATIONS
Discovery Research Data Warehouse, Global Field Development Trial Data Warehouse, Sales and Marketing Data Warehouse

DEPLOYMENT
Database: Oracle 9i  Users: 500 users across all three applications Interface: Web, Desktop
Architecture: Intranet

By enabling more effective product development for faster introduction of new products, DuPont projects a potential of $10-50 million in new revenue per new product introduced.

ESTÉE LAUDER

Instant Access to Timely Business Insight

APPLICATIONS
Inventory Management, Marketing Analysis, Order Tracking, Profit & Loss, Sales Force Automation

DEPLOYMENT
Database: Red Brick  Users: 3,000 employees Interface: Web, e-mail
Architecture: Intranet, Proactive Information Delivery

Estée Lauder selected MicroStrategy in 1997 for its business intelligence applications and has used every version of the MicroStrategy Platform since version 4.x.

QUIXTAR

An Enterprise BI Platform for Reporting on Sales Data

APPLICATIONS
Bonus Awards, Customer Relationship Management, Order Tracking, Sales Management

DEPLOYMENT
Database: SQL Server  DB Size: 1.5 Terabytes
Users: >2,000, including standard, ad hoc, and power users Interface: Desktop, Web, E-Mail
Architecture: Intranet

Alticor subsidiary Quixtar, a top retailer in the online Health and Beauty category, is increasing operational efficiencies, streamlining marketing and sales efforts, and realizing an increased ROI as a result.

RITE-HITE CORPORATION

Supporting Multiple BI Applications on a Global Scale

APPLICATIONS
Business Performance Management, Employee Performance Data, Executive Scorecards, International Reporting, Trend Analysis

DEPLOYMENT
Database: SQL Server  Users: 120 employees across a variety of departments, including sales, marketing, manufacturing, and executives, running an average of 60,000 reports per month Interface: Web, Narrowcast Server, e-mail
Architecture: Intranet

Rite-Hite Corporation has been able to improve overall profit margins; reduce costs in purchasing, manufacturing, and engineering; identify trends in revenue, margins, and gross profits; and impact global and target account growth.

Consumer Goods & Manufacturing Customers Include:
Alticor
Amway Corporation
Avon Products
Benetton
Boucheron
Campbell’s USA
Cardinal Glass Industries
Chevron Products Company
Chiquita Brands LLC
Clarkson
Danone
DuPont
Estée Lauder
Giorgio Armani Corporation
Godiva
Gucci
Hallmark Cards
Herbalife
Hershey
Hyundai Motors
Kao Hanbai
Levi Strauss & Co.
Liquor Control Board of Ontario
Liz Claiborne
Michelin North America
Nampak
Nestle España
Nygard International
Oakwood Homes
Pinnacle Corporation
Porsche Cars North America
Premium Standard Farms
Quixtar
Republic National Distributing Co.
Revlon
Rheem Manufacturing
Rite-Hite Corporation
Russ Berrie & Co., Inc.
Saint Gobain
Sennheiser electronic GmbH & Co.
Unified Western Grocers
U.S. Borax, Inc.
VSM Group
Warnaco
Waterford Wedgwood
Wilbur-Ellis Company
Wilton Industries
Woodside Group

Over 150 CPG and Manufacturing Companies are MicroStrategy Customers

Snapshot of MicroStrategy Technology at Work in the Consumer Goods & Manufacturing Industry:

“MicroStrategy gives us a single source for critical information throughout the organization, so we can spend less time debating data and more energy making critical decisions. MicroStrategy fits the needs of our growing business with its dynamic, cutting-edge features and the scalability to keep our growing user base apprised of business performance.”

Mike Glazik, Vice President of Customer Service, Wilton Industries

Customer Applications

<table>
<thead>
<tr>
<th>Analytical CRM</th>
<th>Financial Analysis</th>
<th>Operations Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Churn Analysis</td>
<td>Accounts Receivable Reporting</td>
<td>Capacity Planning &amp; Forecasting</td>
</tr>
<tr>
<td>Customer Profitability</td>
<td>Budget Variance Analysis</td>
<td>Collaborative Planning</td>
</tr>
<tr>
<td>Customer Scorecards</td>
<td>Contracts Reporting</td>
<td>Failure Notification</td>
</tr>
<tr>
<td>Dispatch Request and</td>
<td>Cost Analysis</td>
<td>Fulfillment</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Margin Analysis</td>
<td>Manufacturing Planning</td>
</tr>
<tr>
<td>Questions Reporting</td>
<td>Payment and Collection Reporting</td>
<td>Materials Routing</td>
</tr>
<tr>
<td>Service Complaints</td>
<td>P&amp;L Reporting</td>
<td>Procurement</td>
</tr>
<tr>
<td>Service Level Agreement</td>
<td>Revenue Reporting</td>
<td>Replenishment</td>
</tr>
<tr>
<td>Trouble Ticket Resolution</td>
<td>Tariffs &amp; Taxes</td>
<td>Supplier Scorecards</td>
</tr>
<tr>
<td>Warranty Analysis</td>
<td></td>
<td>Warranty Cost Distribution</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Call Center Operations</th>
<th>Marketing and Customer Analysis</th>
<th>Sales Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Times</td>
<td>Campaign Analysis</td>
<td>Buying Trends</td>
</tr>
<tr>
<td>Call Volumes</td>
<td>Customer Loyalty Analysis</td>
<td>Channel Analysis</td>
</tr>
<tr>
<td>Complaint Logs</td>
<td>Customer Segmentation</td>
<td>Commission &amp; Quota</td>
</tr>
<tr>
<td>Employee Productivity</td>
<td>Demographic Analysis</td>
<td>Market Basket Analysis</td>
</tr>
<tr>
<td>Forecast Capacity and Staffing</td>
<td>Loyalty Programs</td>
<td>Orders and Shipments</td>
</tr>
<tr>
<td>Response Times</td>
<td>Preferences and Permissions</td>
<td>Pricing Models &amp; Discounting</td>
</tr>
<tr>
<td></td>
<td>Promotional Lift</td>
<td>Product Affinity Analysis</td>
</tr>
<tr>
<td></td>
<td>Service and Transaction History</td>
<td>Product Launch</td>
</tr>
<tr>
<td></td>
<td>Web Traffic Analysis</td>
<td>Sales Performance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Up-Sell / Cross-Sell Analysis</td>
</tr>
</tbody>
</table>

Industry: Consumer Goods and Manufacturing
## Snapshot of MicroStrategy Technology at Work in the Insurance Industry:

### GEICO CORPORATION

**Analyzing Claims Data with MicroStrategy**

**APPLICATIONS**
- Claims Analysis, Marketing

**DEPLOYMENT**
- Database: DB2
- DB Size: 8.5 Terabytes
- Users: 1,500
- Architecture: Intranet

GEICO employees and executives use MicroStrategy to monitor their corporate performance and analyze volumes of customer and sales data. With MicroStrategy’s dashboards and one-click analysis, GEICO personnel can seamlessly gain greater insight into sales activity to enhance customer relationships and sales growth.

### GRANGE INSURANCE

**Enterprise Reporting and Analysis**

**APPLICATIONS**
- Analysis of Sales and Loss Ratios, Customer Management, Enterprise Reporting, Product Design Analysis

**DEPLOYMENT**
- Database: DB2, SQL Server
- DB Size: 4 Terabytes
- Users: More than 350 associates, including territory managers, portfolio managers, and customer management personnel
- Architecture: Intranet

MicroStrategy’s integrated business intelligence platform supports a wide range of applications for Grange Insurance across its multiple insurance and financial products. Grange Insurance users rely on MicroStrategy to identify areas of improvement in product design and customer management, and recognize cross- and up-sell opportunities.

### GUY CARPENTER & COMPANY, LLC

**Enabling Insurance Companies to View Maps and Key Disaster Information**

**APPLICATIONS**
- Risk Management Platform

**DEPLOYMENT**
- Database: Netezza
- DB Size: 1-2 Terabytes
- Users: 2,300 clients and internal users, including modelers and sales personnel
- Interface: Web
- Architecture: Extranet

i-axs™ enables insurance companies to log on and view maps; run MicroStrategy reports; view key disaster, terrorism, and catastrophe information; and create new models by invoking MicroStrategy reports to drive analytics.

### NATIONWIDE MUTUAL INSURANCE COMPANY

**Supporting 20,000 Employees that Access 28 BI Applications**

**APPLICATIONS**
- 28 MicroStrategy applications in production, primarily focused on four business areas: personal lines policy analysis, claims management, risk management appraisal, and agent productivity

**DEPLOYMENT**
- Database: 40 node Teradata data warehouse
- DB Size: 44 Terabytes
- Users: 20,000 personnel in Marketing, Underwriting, Pricing, Finance, Research and Development, Product Management, Claims, Special Investigations, Billing, and Internal Reporting

Approximately 20,000 users at Nationwide run an average of 87,000 MicroStrategy queries per month, with 95 percent of the queries completed in less than 5 minutes.

### INSURANCE SEGMENTS:

- Accident and Health Insurance
- Auto and Other Vehicle Insurance
- Commercial Insurance
- Liability Insurance
- Mortgage Guarantee Insurance
- Property and Casualty Insurance
- Reinsurance

---

**Industry: Insurance**

4 of the Top 5 Global Insurers are MicroStrategy Customers

**Insurance Customers Include:**

- 21st Century Insurance
- Acturis
- Aegon
- Allstate Insurance
- Amica Mutual Insurance
- Amlin plc
- Barmer
- Carl Warren & Co.
- Deutscher Herold
- Elvia Reiseversicherungen
- GEICO Corporation
- Generali Belgium
- Grange Insurance
- Guy Carpenter & Company, LLC
- La Capitale Assurances Generales
- Länsförsäkringar Stockholm
- Mapfre Re
- Momentum
- Mondial Assistance
- Nationwide Mutual Insurance Co.
- Nationwide Provident
- RGA Reinsurance Company
- Samsung Life Insurance
- Wausau Benefits, Inc.
- Wells Fargo
- Zürich Group
“MicroStrategy gives us a comprehensive view of our business and enables us to better serve our customers and run our operations more efficiently. Our diverse business generates volumes of data and MicroStrategy provides our associates with analytically-based and actionable insight to make more effective decisions that positively impact our bottom line.”

Tony Simpkins, Data Warehouse Project Manager, Grange Insurance

Customer Applications

Analytical CRM
- Campaign Analysis
- Churn Analysis
- Cross-Sell Analysis
- Customer Loyalty Analysis
- Customer Profitability
- Customer Scorecards
- Customer Service Analysis
- Market Segmentation
- Product Profitability Analysis
- Risk Pool Analysis
- Up-Sell Analysis

Financial Analysis
- Accounts Receivables Reporting
- Budget Variance Analysis
- Compliance Alerting
- Cost Analysis
- Margin Analysis
- Portfolio Analysis
- Revenue Reporting
- Taxes
- What-if Analysis

Operations
- Asset Management
- Customer Alerts
- Customer Statements and Billing
- Payment and Collection Reporting
- Policy Expiration Alerts
- Portfolio Analysis
- Risk Analysis

Product Analysis
- Assortment Optimization
- Category Contribution
- Category Scorecards
- Discounting Analysis
- Market Comparison
- Pricing Models
- Product Bundling Analysis
- Product Management
- Product Sales Trend Analysis

Risk Analysis and Fraud Profiling
- Claims Analysis
- Credit Risk Management
- Customer Risk Scoring
- Exceptions/Outliers Risk Management
- Exposure Reporting
- Fraud Risk Management
- Prepayment Risk
- Underwriting Scorecards
- Value At Risk Analysis

Sales Analysis
- Agent Performance
- Branch Office Scorecards
- Call Center Management
- Commission and Quota Reporting
- Customer Satisfaction
- P&L Reporting
- Sales Channel Efficiency
- Trouble Ticket Resolution
- Web Traffic Analysis
**At the Vanguard of a Quiet Revolution**

Business intelligence is having a profound impact in the business place. Every day, millions of people use business intelligence to enhance the efficiency of their organizations and improve the services they provide their customers. Many organizations have already successfully implemented dozens of reporting, analysis, and information delivery applications, and these same organizations have dozens more applications in development.

On the following pages, you’ll get a glimpse of some of the many applications that organizations are building using MicroStrategy technology. While they represent only a subset of the interesting applications being constructed and deployed, we think they are representative of the variety and richness of useful business applications that can be easily built with MicroStrategy.

We hope that as you review these applications, you’ll begin to envision how MicroStrategy technology can be used to improve your business. As a worldwide leader in business intelligence software, we’re committed to making your business intelligence vision, no matter how far-reaching, a reality.
Companies rely on business intelligence to provide visibility into the full scope of their business and financial operations. The finance function has historically been charged with providing this fiscal transparency and they are increasingly leveraging business intelligence to analyze sources of revenue and cost, peer into the data underlying the statement of cash flows, and compare revenue and cost plans versus actuals. Externally, organizations must satisfy public accounting requirements for government organizations and shareholders. Internally, financial data must be delivered to financial analysts, business unit management, executives, and directors. In light of heightened government and shareholder scrutiny of corporate financials, finance and accounting departments are feeling additional pressure to make detailed information available more quickly and widely than ever before. Business intelligence uniquely provides efficient transparency, analysis, and delivery of corporate financial data.

**BUSINESS CHALLENGES SOLVED WITH BUSINESS INTELLIGENCE**

**Analyze data down to the journal entry.** From summary reporting to the most detailed analysis, financial users require the ability to investigate revenue and cost drivers down to journal entries. This transactional-level investigation allows users to identify suspect items down to their root causes, compare current period transactions against historical norms, and link transactions to individuals responsible.

**Financial data to detect material items and anomalies.** Supporting financial accountability and risk management BI provides automatic detection of variances and deviations in patterns of activity. Data mining algorithms scour the financial database and monitor performance against user-defined exceptions. Alerting capabilities can automatically detect potential problems and notify the relevant manager.

**Electronically distribute financial reports securely.** With various user populations requiring timely access to financial reports, electronic report distribution via e-mail, in Microsoft® Excel format, or over the Web is essential. Information must be protected to ensure users can only access financial data for which they have privileges. Even outside auditors and directors may access financial information securely through a company’s extranet.

**Deliver accurate financial data in Microsoft® Excel format.** Many financial analysts use Excel to manipulate and analyze financial data and to format reports for delivery to other users in the organization. The business intelligence platform must not only provide static financial reports in Excel files, but also leverage the advanced Excel features for interactive analysis by providing access to all of the underlying data.
CUSTOMER VIGNETTES: IMPLEMENTING BI FOR FINANCE

> STATE OF TENNESSEE

**Saving Millions Through Quick Access to Financial Information**

The State of Tennessee is using MicroStrategy to anchor its financial data access data warehouse. With MicroStrategy, decision makers in more than 60 statewide agencies, including the Departments of Human Services, Finance and Administration, and Revenue, are able to more effectively track revenues and expenditures, and make more informed decisions that can reduce costs and increase efficiency.

“The use of MicroStrategy software is helping the State of Tennessee better manage financial information, leading to efficiencies that save both time and money,” said Jan Sylvis, Chief of Accounts at the State of Tennessee. “We see improved strategic planning, activity-based costing, and activity-based management in support of State programs.”

MicroStrategy is providing the State of Tennessee’s end users with comparative and exception reporting, more efficient and timely data analysis, enhanced financial data analysis, summary level reporting for management, and consistent interpretation of financial data definitions and business rules. MicroStrategy and the State of Tennessee’s Department of Finance and Administration were honored in 2003 with a DM Review World Class Solution Award.

> CHARMING SHOPPES, INC.

**Using Business Intelligence Across the Retail Enterprise to Improve Decision Making**

Charming Shoppes, Inc. uses the MicroStrategy platform across its enterprise. Charming Shoppes is the largest plus-size specialty apparel retailer in America, with more than 2,300 stores nationwide.

Charming Shoppes’ extensive use of the MicroStrategy platform generates daily and weekly reports on an array of company activity. These highly detailed reports encompass merchandise sales and inventory analysis; assessments of the history of customer traffic in and out of stores; analysis of point-of-sales transaction details and promotion history, evaluations of transaction and promotion history for identified customers; HR/payroll reviews of store payroll hours and budget data; and analysis of accounts payable, the general ledger and fixed asset information.

These applications, running against a 2-terabyte Teradata data warehouse, involve each division headquarters and store operations’ field office and more than 800 Charming Shoppes employees, a number that is expected to grow.
Balance Sheet Reporting and Analysis

The Balance Sheet is one of the fundamental reports of corporate accounting. Balance sheets are produced multiple times during the close cycle to verify accuracy before one final version is released to shareholders, government agencies, and the public. BI enables the consolidation of the Balance Sheet much more rapidly than typical ERP systems – reducing the time to close. The most basic level of reporting is the automated consolidation of the balance sheet and the electronic distribution of the report securely to all approving authorities. Typical analytical areas include interactive investigation of balance sheet anomalies, drilling to more detailed subaccounts through simple point and click, and the creation of custom divisional or regional balance sheets.

Sample Report: “Drillable” Balance Sheet

<table>
<thead>
<tr>
<th>Period Ending</th>
<th>31-Dec-06</th>
<th>30-Sep-06</th>
<th>30-Jun-06</th>
<th>31-Mar-06</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and Cash Equivalents</td>
<td>$31,209,000</td>
<td>$28,385,000</td>
<td>$37,292,000</td>
<td>$32,821,000</td>
</tr>
<tr>
<td>Short Term Investments</td>
<td>$56,000</td>
<td>$53,000</td>
<td>N/A</td>
<td>$590,000</td>
</tr>
<tr>
<td>Net Receivables</td>
<td>$28,690,000</td>
<td>$19,850,000</td>
<td>$22,761,000</td>
<td>$22,652,000</td>
</tr>
<tr>
<td>Inventory</td>
<td>$890,000</td>
<td>$930,000</td>
<td>$784,000</td>
<td>$945,000</td>
</tr>
<tr>
<td>Other Current Assets</td>
<td>$5,032,000</td>
<td>$4,685,000</td>
<td>$3,100,000</td>
<td>$4,436,000</td>
</tr>
<tr>
<td>Total Current Assets</td>
<td>$65,877,000</td>
<td>$54,083,000</td>
<td>$63,937,000</td>
<td>$61,664,000</td>
</tr>
<tr>
<td><strong>Long Term Investments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long Term Investments</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Property Plant and Equipment</td>
<td>$18,471,000</td>
<td>$20,161,000</td>
<td>$22,291,000</td>
<td>$24,303,000</td>
</tr>
<tr>
<td>Goodwill</td>
<td>$540,000</td>
<td>$2,775,000</td>
<td>$3,575,000</td>
<td>$4,437,000</td>
</tr>
<tr>
<td>Intangible Assets</td>
<td>$3,214,000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Other Assets</td>
<td>$1,123,000</td>
<td>$5,813,000</td>
<td>$6,091,000</td>
<td>$5,913,000</td>
</tr>
<tr>
<td>Total Long Term Assets</td>
<td>$23,449,000</td>
<td>$28,749,000</td>
<td>$31,957,000</td>
<td>$34,653,000</td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>$89,326,000</td>
<td>$82,832,000</td>
<td>$95,894,000</td>
<td>$95,297,000</td>
</tr>
</tbody>
</table>

This balance sheet report helps accountants close the books more quickly by allowing direct analysis of line items from summary data. Clicking on the account links in the left hand columns, users can immediately drop to the subaccount level. Potential anomalies are highlighted based on the accountant’s business rules, e.g., numbers that are more than 10% out of trend. As a next step, the analyst can view key financial ratios (quick ratio, current ratio, return on assets), and determine if these have changed materially from prior periods.

COMMON BUSINESS QUESTIONS

- How do the balance sheets of different subsidiaries compare?
- What is the variance of assets, liabilities, and equity between two selected time periods?
- What is the Net Working Capital of the company?
- Which business unit caused cash drain in a particular period?
- What is the breakdown of shareholders equity in a certain period?
- What is the leverage and liquidity of the company?
Profit and Loss/Income Statement Analysis

The profit and loss (P&L) statement, detailing revenue and costs, is a key component of certain SEC filings and is also a useful tool for understanding the health of a business. Executives and managers continually monitor P&L actuals versus budgets and forecasts to ensure their business is operating on plan. Automatically generated P&L reports allow managers to see current period revenue, costs, and profitability, period over period and business unit to business unit comparisons, and actuals to plan. Business intelligence also permits development of more accurate and timely quarterly and yearly performance analysis, allows navigation to detailed revenue and cost components, and enables more refined margin and contribution assessment.

Sample Report: Abbreviated Profit & Loss Summary by Region

Region: Latin America
Month: Sep-07

<table>
<thead>
<tr>
<th>Account Type</th>
<th>Actual YTD ($)</th>
<th>YTD Budget Through Current Month ($)</th>
<th>YTD Budget Variance ($)</th>
<th>YTD Budget Variance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TeleSales Revenue</td>
<td>8,947,825</td>
<td>9,256,340</td>
<td>(308,515)</td>
<td>(-3%)</td>
</tr>
<tr>
<td>Store Revenue</td>
<td>10,589,423</td>
<td>10,245,675</td>
<td>343,748</td>
<td>3%</td>
</tr>
<tr>
<td>Internet Revenue</td>
<td>2,456,812</td>
<td>3,012,500</td>
<td>(555,688)</td>
<td>(-18%)</td>
</tr>
<tr>
<td>Other Revenue</td>
<td>56,892</td>
<td>0</td>
<td>56,892</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>22,050,952</td>
<td>22,514,515</td>
<td>(463,563)</td>
<td>-2%</td>
</tr>
<tr>
<td>Salaries &amp; Commissions</td>
<td>3,256,425</td>
<td>3,385,500</td>
<td>10,075</td>
<td>0%</td>
</tr>
<tr>
<td>T&amp;E</td>
<td>245,987</td>
<td>250,000</td>
<td>4,013</td>
<td>2%</td>
</tr>
<tr>
<td>Communications</td>
<td>66,487</td>
<td>65,000</td>
<td>(1,487)</td>
<td>(-2%)</td>
</tr>
<tr>
<td>Shipping, Pasting, Supplies</td>
<td>51,987</td>
<td>50,000</td>
<td>(1,987)</td>
<td>(-4%)</td>
</tr>
<tr>
<td>Marketing</td>
<td>1,356,789</td>
<td>1,350,000</td>
<td>6,789</td>
<td>(-1%)</td>
</tr>
<tr>
<td>Depreciation</td>
<td>215,874</td>
<td>205,000</td>
<td>10,874</td>
<td>4%</td>
</tr>
<tr>
<td>Rent and Related Office Exp</td>
<td>103,452</td>
<td>103,475</td>
<td>23</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>5,416,001</td>
<td>5,426,975</td>
<td>12,974</td>
<td>0%</td>
</tr>
<tr>
<td>Contribution</td>
<td>16,634,901</td>
<td>17,085,540</td>
<td>(450,639)</td>
<td>-3%</td>
</tr>
</tbody>
</table>

This example of a P&L highlights a company’s Latin American business for the year to date. With built-in security filters, the General Manager for Latin America can see only the financial data related to her region. Negative variances are highlighted in red. By monitoring this report monthly, the Regional Manager can see that she’s managed costs effectively but revenue is trailing plan. A next step would be to drill on the Internet and Telesales Revenue, which have the highest negative variance, at the country level to determine if the problem is due to one country or the entire region.

COMMON BUSINESS QUESTIONS

- What is the profit margin of each business unit and/or geographic region?
- How have margins changed month-to-month over the past year?
- Which business units are hitting their margin targets? Which are falling short?
- Which business units are more than 10% above/below their contribution targets?
- Which units or regions are over budget by more than 5%?
- Which departments have the highest contribution per employee?
- Are there trends underlying any revenue or expense categories that need immediate attention?
Cash Flow Analysis

A Cash Flow Statement is one of the standard components of certain SEC filings that summarizes the operating activity of a business and provides insight into its ability to generate cash. Executives, treasurers, accounting professionals, and investors rely on cash flow statements to make financing, operating, and investing decisions. Standard financial systems, which aren’t optimized to handle large amounts of transaction-level data, take many hours to consolidate cash flow reports and can’t automatically distribute these reports. Business intelligence provides automatic, near real-time generation and distribution of the cash flow statement. Business intelligence seamlessly integrates sophisticated analysis including foreign currency exposure, optimized payables schedules, and cash flow predictions to ensure investments in short-term and long-term instruments are aligned with cash requirements.

Sample Report: Operational Cash Flow Changes

Corporation: France

<table>
<thead>
<tr>
<th>Period Ending</th>
<th>31-Mar-07</th>
<th>31-Dec-06</th>
<th>31-Sep-06</th>
<th>30-Jun-06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Income (000)</td>
<td>$ 1,273</td>
<td>$ 1,494</td>
<td>$ 1,494</td>
<td>$ 910</td>
</tr>
<tr>
<td>- Cash Flow Operating Activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ Depreciation</td>
<td>$ 387</td>
<td>$ 434</td>
<td>$ 410</td>
<td>$ 505</td>
</tr>
<tr>
<td>+ Adjustments to Net Income</td>
<td>$ 111</td>
<td>$ 24</td>
<td>$ 142</td>
<td>$ 140</td>
</tr>
<tr>
<td>+ Changes in Accounts Receivables</td>
<td>$ 300</td>
<td>(73)</td>
<td>(44)</td>
<td>86</td>
</tr>
<tr>
<td>+ Changes in Liabilities</td>
<td>(132)</td>
<td>88</td>
<td>(15)</td>
<td>(122)</td>
</tr>
<tr>
<td>+ Changes in Inventories</td>
<td>124</td>
<td>333</td>
<td>158</td>
<td>662</td>
</tr>
<tr>
<td>+ Changes in Other Operating Activities</td>
<td>2,413</td>
<td>2,316</td>
<td>2,010</td>
<td>2,311</td>
</tr>
<tr>
<td>- Cash Flows From Operating Activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ Cash Flows From Investing Activities</td>
<td>(482)</td>
<td>(312)</td>
<td>(195)</td>
<td>(224)</td>
</tr>
<tr>
<td>+ Cash Flows From Financing Activities</td>
<td>1,516</td>
<td>(1,623)</td>
<td>(524)</td>
<td>(1,746)</td>
</tr>
<tr>
<td>Effect of Exchange Rate</td>
<td>(8)</td>
<td>22</td>
<td>(15)</td>
<td>25</td>
</tr>
<tr>
<td>Change in Cash and Cash Equivalents</td>
<td>407</td>
<td>403</td>
<td>1,276</td>
<td>366</td>
</tr>
</tbody>
</table>

This example shows a segment of a standard Statement of Cash Flows with items highlighted that are more than 25% out-of-trend with the annual average. The outline mode shown here is automatically generated and allows quick access to the line items comprising a summary account. Highlighted items suggest areas for further investigation, such as Accounts Receivable, to determine the cause of the increase like a large customer not paying a bill or exposure to a troubled industry or geography.

COMMON BUSINESS QUESTIONS

- Can the company finance itself internally or will it need additional outside financing for its future growth opportunities?
- What is the cash position for each subsidiary in both local and home currency?
- What is the cash risk associated with exchange rates?
- On average, how long does a particular entity take to pay invoices? Collect receivables?
- What impact does a change to depreciation method have?
- What is the trend in liabilities and will the current ratio suffer as a result?
- What investing activities are yielding the best results? Worst results?
Accounts Receivable and Accounts Payable Reporting and Analysis

Companies track Accounts Receivable (A/R) and Payable (A/P) to manage operating cash flow. Basic A/R and A/P reports includes tracking the value of accounts that are 30, 60, or 90 days past due, monitoring distribution of receivables across customers, and reviewing payment trends for vendors across periods. More sophisticated analysis includes predicting potential bad debts, forecasting cash outlays, and tracking invoices and journal entries to the corresponding accounting representative. Businesses adding business intelligence to their A/P and A/R functions are benefitting from more efficient cash management.

Sample Report: Accounts Receivable Summary for Selected Organizations

<table>
<thead>
<tr>
<th>Account Type</th>
<th>Payment History</th>
<th>INVOICE ID</th>
<th>TOTAL AR</th>
<th>Past Last 90 Days</th>
<th>30 Days</th>
<th>31 to 60 Days</th>
<th>60 to 90 Days</th>
<th>90 to 180 Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Party Supply Company</td>
<td>Good</td>
<td>14661</td>
<td>$9,342</td>
<td>$3,114</td>
<td></td>
<td>$3,114</td>
<td>$6,228</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12766</td>
<td>$0</td>
<td>$9,000</td>
<td></td>
<td></td>
<td></td>
<td>$6,228</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18242</td>
<td>$7,626</td>
<td>$7,625</td>
<td>$3,813</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$16,668</td>
<td>$19,739</td>
<td>$3,813</td>
<td>$6,927</td>
<td>$0</td>
<td>$6,228</td>
</tr>
<tr>
<td>Parts Manufacturer</td>
<td>Fair</td>
<td>07382</td>
<td>$70,250</td>
<td>$35,886</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>70002</td>
<td>$35,886</td>
<td>$35,886</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>71225</td>
<td>$9,899</td>
<td>$9,899</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$116,035</td>
<td>$0</td>
<td>$9,899</td>
<td></td>
<td></td>
<td>$106,136</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$133,035</td>
<td>$19,739</td>
<td>$3,813</td>
<td>$16,826</td>
<td>$0</td>
<td>$112,354</td>
</tr>
</tbody>
</table>

This summary report links invoice detail, A/R aging, and customer payment history. The report contains links to the invoice detail providing access to invoiced items, purchase order number, and approver name. The payment history field is based on the organization’s definitions for payment scoring and is calculated based on historic payment patterns. As a next step, users can navigate to reports showing all receivables more than 90 days old, receivables greater than a certain dollar amount, or trends in certain geographies or industries.

Common Business Questions

- What is the aging distribution of accounts receivable?
- What is the total amount of money in collections?
- Which are my poor-payment history customers by dollar amount and/or invoice quantity?
- Which sales representatives need to be notified to assist in the collection process?
- What is our predicted bad debt?
- What is the aging distribution of our accounts payable?
- To which vendors does each business unit owe money? When do they need to pay?
- With which vendors do we do the highest volume of business?
- What is the forecasted impact on working capital?
Financial Budgeting and Forecasting

Financial budgeting and forecasting is an essential part of the business planning process. Executives and managers continually revisit forecasts as actuals are reported to determine how their business is performing relative to plan. Forecast reports allow detailed analysis by budget owners at every level of the organization and set the stage for determining sources of revenue and spending priorities. From simple reporting on actual performance versus budget to more sophisticated “what if” scenario creation and predictive modeling, organizations use business intelligence to make fact-based business plans and better monitor performance.

Sample Report: Field Sales Regional Dashboard > Western Region

This dashboard is an example of a report that might be deployed to each regional sales manager comparing revenue, compensation targets, and quarterly forecasts. Sales managers can quickly see how close they are to the revenue goal and the opportunities they should focus on in the short-term to reach their goals. Sales managers can click from the summary to specific deal details to identify sales representative assignment, customer contacts, and next action items.

<table>
<thead>
<tr>
<th>Account</th>
<th>Actual QTD</th>
<th>QTD Budget ($)</th>
<th>QTD Budget Variance ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>REVENUE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product License</td>
<td>$65,236,584</td>
<td>$78,523,698</td>
<td>$(13,287,114)</td>
</tr>
<tr>
<td>Services</td>
<td>$56,325,874</td>
<td>$51,232,156</td>
<td>$5,093,718</td>
</tr>
<tr>
<td>Other</td>
<td>$2,154,885</td>
<td>$7,654,896</td>
<td>$(5,500,011)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$123,717,343</td>
<td>$137,410,750</td>
<td>$(13,693,407)</td>
</tr>
<tr>
<td>COSTS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salaries</td>
<td>$53,663,095</td>
<td>$52,610,878</td>
<td>$(1,052,218)</td>
</tr>
<tr>
<td>Rent</td>
<td>$33,639,034</td>
<td>$34,325,545</td>
<td>$686,511</td>
</tr>
<tr>
<td>Fixed Allocations</td>
<td>$5,026,205</td>
<td>$5,128,780</td>
<td>$102,576</td>
</tr>
<tr>
<td>Sales and Marketing</td>
<td>$19,238,306</td>
<td>$19,630,925</td>
<td>$392,618</td>
</tr>
<tr>
<td>Communications</td>
<td>$325,432</td>
<td>$451,023</td>
<td>$125,592</td>
</tr>
<tr>
<td>TOTAL COSTS</td>
<td>$111,892,071</td>
<td>$112,147,150</td>
<td>$255,079</td>
</tr>
<tr>
<td>CONTRIBUTION</td>
<td>$11,825,272</td>
<td>$25,263,600</td>
<td>$(13,438,328)</td>
</tr>
</tbody>
</table>

COMMON BUSINESS QUESTIONS

- What is the variance between my revenue forecast, budget, and compensation target by service line?
- How much revenue does each region/district/business unit expect to earn in the coming quarter?
- Which regions’ forecasts are above corporate plan?
- What is the variance between my forecast product revenue and my compensation target?
- Does one unit predict significantly more or less revenue than last quarter? Why?
- Which forecasts are more than 10% below expectations?
- Which business units have historically performed 5% above or below plan?
Risk Management

Credit risk, contract risk, currency risk, fraud risk, and audit risk—all are becoming increasingly important components of risk that must be controlled by corporations and government agencies. Credit risk management, by combining data from publicly available sources with corporate customer and sales data, focuses on the determination of credit ratings, credit risk exposure in a particular country or industry, or the impact of increased customer defaults. Currency risk analysis involves evaluation of exchange rate exposure and predictive modeling of the impact of currency fluctuations on forecasted profit margin. Fraud risk analysis, through the use of statistical data mining techniques, can uncover patterns of activity correlated to fraudulent events. Business intelligence, by enabling the use of data mining and statistical techniques for risk detection and management, empowers wider worker populations to help mitigate the various forms of corporate risk.

Sample Report: Credit Risk Assessment

<table>
<thead>
<tr>
<th>The Clothing Company</th>
<th>Credit Rating</th>
<th>Total Credit Line</th>
<th>Credit Available</th>
<th>% Credit Line Available</th>
<th>Deposits and Other Assets</th>
<th>Payment History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ocean Airline</td>
<td>Aaa</td>
<td>$575,138</td>
<td>$57,892</td>
<td>10%</td>
<td>$8,503,990</td>
<td>Good</td>
</tr>
<tr>
<td>Global Industries</td>
<td>Bbb</td>
<td>$651,822</td>
<td>$324,587</td>
<td>50%</td>
<td>$9,637,840</td>
<td>Fair</td>
</tr>
<tr>
<td>The Clothing Company</td>
<td>bb</td>
<td>$452,846</td>
<td>$325,698</td>
<td>72%</td>
<td>$6,695,781</td>
<td>Fair</td>
</tr>
<tr>
<td>Financial Instruments</td>
<td>Aaa</td>
<td>$373,053</td>
<td>$372,154</td>
<td>100%</td>
<td>$5,515,962</td>
<td>Good</td>
</tr>
<tr>
<td>NSP Co.</td>
<td>Bbb</td>
<td>$360,991</td>
<td>$123</td>
<td>0%</td>
<td>$5,037,613</td>
<td>Poor</td>
</tr>
<tr>
<td>Great Motors</td>
<td>AAA</td>
<td>$369,115</td>
<td>$89,654</td>
<td>24%</td>
<td>$5,457,734</td>
<td>Good</td>
</tr>
<tr>
<td>Light Food</td>
<td>Aaa</td>
<td>$261,963</td>
<td>$154,789</td>
<td>59%</td>
<td>$3,864,513</td>
<td>Fair</td>
</tr>
<tr>
<td>Eyeshapers Inc.</td>
<td>Aaa</td>
<td>$172,513</td>
<td>$65,218</td>
<td>38%</td>
<td>$2,550,777</td>
<td>Poor</td>
</tr>
<tr>
<td>Internet Solutions LLC</td>
<td>Bbb</td>
<td>$153,399</td>
<td>$125,698</td>
<td>82%</td>
<td>$2,267,270</td>
<td>Good</td>
</tr>
<tr>
<td>University of Vienna</td>
<td>Aaa</td>
<td>$173,818</td>
<td>$154,898</td>
<td>89%</td>
<td>$2,570,073</td>
<td>Good</td>
</tr>
</tbody>
</table>

This report illustrates one of several analysis steps that may be used when determining the financial risk associated with extending additional credit to customers. In assessing credit risk, it is important to determine various characteristics of a customer/organization including credit score/credit rating, transaction history, and balances. The next steps would be to investigate the recent transaction details and financial statements of customers approaching their credit limit with poor payment histories. Forwarding a report on individual customers to the respective credit managers can aid in collections and risk management.

Common Business Questions
- What is a customer’s payment history?
- At the current exchange rate, how do revenues and expenses convert to local currency?
- What is the variance on forecasted profit margin at the current exchange rate and at the year end projected exchange rate?
- How does the current cost of capital affect margin compared to last year?
- Is the average age of A/R increasing or decreasing?
- What five foreign currencies represent the most exposure?
As organizations continue to adopt self-service models for personnel benefits enrollment and reporting, business intelligence has provided easy-to-use tools for employees to view and report on their personal benefits over the Web. With the resultant elimination of much of the administration of personnel benefits, human resources personnel are spending more of their time ensuring compliance with government regulations and finding opportunities to better manage their human resource investment. Business intelligence is meeting this challenge as well, providing a complete platform for HR personnel to investigate employee data, in aggregate or at an individual level, with employee anonymity or specific employee detail. Multiple levels of security within the business intelligence product must ensure the confidentiality of employee records. Ultimately, HR departments are becoming increasingly dependent on business intelligence to better service the employee base, report on regulatory compliance, and understand patterns of attrition and compensation to lower the ongoing cost of the organization’s human resource investment.

**BUSINESS CHALLENGES SOLVED WITH BUSINESS INTELLIGENCE**

*Personalized access to benefits information.* Web portals are becoming the standard access method for employees to view their insurance coverage, vacation time, paycheck and expense reimbursement status, and stock option and portfolio performance. Business intelligence allows secure, personalized information access over the Web through an intuitive, “no training required” interface.

*Complete access to employee, regulatory, and benefits information.* Human resources analysis requires access to employee, regulatory, and benefits information to adequately understand recruitment, compensation, retention, attrition, and job performance results. Business intelligence provides trend reports with the ability to drill into individual employee and policy detail.

*Flexible support for changing organizational structures.* In today’s environment, businesses are constantly re-aligning themselves to improve efficiencies and focus on core operations. Reporting structure changes are difficult to make and almost impossible to view in most legacy HR systems. The BI application provides the flexibility to easily view changes in reporting structures, and graphically review career progression.

*Automated delivery of organizational scorecards.* Employee satisfaction, survey results, retention and attrition statistics, headcount trends, recruitment metrics, compensation trends, and employee performance – all are measures of organizational health that comprise the HR scorecard. Business intelligence combines tabular and graphical representations of these metrics into integrated scorecards that can be automatically delivered to executives and HR personnel on a regular basis.
CUSTOMER VIGNETTES: IMPLEMENTING BI FOR HUMAN RESOURCES

> DARDEN RESTAURANTS, INC.

Reducing Employee Turnover and Costs

At Darden Restaurants, Inc. the MicroStrategy platform currently anchors 12 business intelligence applications across 17 business areas – assessing sales, finance, human resources, and competitiveness.

A MicroStrategy customer since 1997, Darden Restaurants, Inc. is the largest casual dining restaurant company in the world, operating more than 1,400 Red Lobster, Olive Garden, Bahama Breeze, Smokey Bones, and Seasons 52 restaurants in North America.

More than 250 of Darden Restaurant’s financial and marketing analysts, operations and human resource personnel, and executive management use MicroStrategy to track, analyze, and report on profitability and marketing promotions, guest satisfaction scores, employee retention, as well as perform market basket analyses, inventory and scenario planning. Employees are able to determine, for example, the impact on a restaurant’s profitability if 50 percent of its patrons purchased an additional appetizer. Darden recently expanded its enterprise reporting, utilizing Report Services and Narrowcast Server to deliver sales and guest count trend reporting to restaurant managers and senior executives.

> THE UNIVERSITY OF MIAMI

Driving Decisions on Student Admissions and Enrollment Processes

The University of Miami is using MicroStrategy to gain insight into its academic environment and student population and drive decision making on admissions and enrollment processes. The University of Miami, which offers a wide selection of academic disciplines from accounting to women’s studies, is comprised of twelve schools and colleges and has approximately 15,250 undergraduate and graduate students from around the world.

The University of Miami uses MicroStrategy software to analyze its student data in order to get a better profile of its applicant pool and existing student body. End users across the various schools and colleges are able to run reports that examine current student reporting, fundraising, campaign results, equality administration, financial aid, human resources, purchasing, student admissions, and student employment information. Analysis of the data can be done across the student body or at the individual level, with student-specific identifiers removed to ensure individual privacy. The institution is developing two additional business intelligence applications – financial records and facilities management – that will deploy on the MicroStrategy platform.

“The professional look and feel of Report Services documents allow us to deliver presentation ready reports quickly and easily.”

Karol Keranen, Project Leader for Business Intelligence Systems, Darden Restaurants, Inc.

“MicroStrategy software provides the University of Miami with an innovative way to organize and share information about our students, and drive our admissions and enrollment decisions. With MicroStrategy, we can easily pull up reports about our current student body or applicant pool and make important decisions on admissions acceptances and enrollment questions.”

Mary Sapp, Executive Director of Planning and Institutional Research, The University of Miami
Headcount Trend Analysis

Headcount trend analysis provides useful information about employee movement into, out of, and within a corporation, division, or department. HR analysts and business unit managers monitor headcount, payroll, and job satisfaction metrics to identify over- and under-performing managers, attrition risk within departments, recruitment and compensation trends affecting human resources costs, and trends in employee performance. These analyses reveal areas for training investment, areas of potential product or service delivery risk, and required compensation and recruitment budget revisions.

Sample Report: Attrition Trends by Department

This sample report shows the relationship between voluntary and involuntary departures. It is immediately apparent that the large reduction in force in Q306 resulted in increased voluntary departures in subsequent quarters. From this summary report, an HR analyst could drill to more detailed reports to determine whether particular job functions, departments, management levels, or geographic regions have been more impacted than others.

COMMON BUSINESS QUESTIONS

- What has been the effect of involuntary layoffs on voluntary attrition over time?
- How has our attrition rate fluctuated over the last two years?
- How has headcount varied quarter over quarter by department?
- Given the current attrition rate, how many new employees do I need to hire to maintain the current growth rate?
- Who has transferred in the last 30 days?
- Which 10 units have the highest attrition rates?
- Which business units or regions experienced employee flux rates higher than 10% this year?
Compensation Reporting and Analysis

Employee compensation affects employee morale and retention in addition to the corporate expense line. Employers often benchmark compensation trends across similar employee groups to ensure all employees are being compensated equitably within the organization and on par with industry averages. Compensation reports identify compensation anomalies that management can adjust to keep employee morale high and corporate expenses in check. Data from HR, payroll, and finance systems provide the comprehensive picture of compensation, including salary, bonus, vacation, stock option value, T&E budgets, tuition payments and policies, health and life insurance, and other perks. Sensitive compensation and employee identity information must be securely distributed to appropriate users based on security privileges.

Sample Report: Percentage of Total Compensation

This graph shows the relative contributions of salary and bonus/commission potential to total employee compensation for different divisions. Human Resources would use this analysis to amend compensation plans to be more or less performance-based. A next step would be to analyze the compensation plans within departments to identify individuals whose plans do not fit the model.

COMMON BUSINESS QUESTIONS

- What is the salary distribution of all employees in my company with the title “Sales Representative”?
- Are there any regions where managers make significantly more money than their subordinates (more than 1 standard deviation)?
- What has a certain person’s history of bonuses and raises been during her career?
- Was Employee X given a raise last year?
- What is the average bonus to base salary ratio?
- By department, what is the bonus to salary ratio?
- In rank order, which sales representatives achieved their quota last year?
Employee Expense Reporting

Employees within an organization routinely incur business-related expenses and bill them back to their employer in line with corporate policy. Employee expense reporting reveals amounts incurred by expense category, with totals by employee and group. These summaries can be viewed graphically, and out-of-trend activity automatically detected and highlighted. From these summaries, managers are able to drill down to individual expense item detail, allowing thorough investigation of all areas of the expense process. Business intelligence systematizes the complete review cycle through automated delivery of expense reports to managers and employees prior to each reimbursement cycle.

Sample Report: Regional Expenses by Expense Category

This report graphically reveals trends in spending areas for a region and provides detail on an area with noticeable relative increase in spending – in this case airfare expenses. From this report, a manager could drill to transaction-level detail to see exact expense items, and further to the individuals submitting those items. Further analysis might include investigating a single employee’s complete expense report, trending of expenses within the cost account, or a comparison to expense limits.

COMMON BUSINESS QUESTIONS

- Which employees expensed the highest amounts for cellular phone use in February?
- Which employees are spending the most money?
- Which business unit is expending the largest percentage of its budget on expense reimbursements?
- What types of expenses are responsible for most of our costs?
- Which employees spent over $1,000 on airfare this quarter?
- How many days passed between the date the expense was incurred and the date the employee submitted this expense for reimbursement?
- Did any employees submit expenses outside the usual categories of travel and communications?
- Why did this employee incur this expense? What was this purchase for?
Career Path Reporting and Analysis

Career path reporting and analysis helps companies track employee job function movements and chart employee career paths. HR professionals analyze employee background, current and prior positions, and performance review results (both quantitative and qualitative). Through studying average job tenure, job function transitions, performance ratings, and attrition rates. Human Resources is able to identify segments of employees who may be flight risks, recognize patterns in departures, and make adjustments to keep its most valuable employees. Business intelligence allows the analysis of large personnel data sets from multiple source systems and provides role-based security to protect sensitive employee information.

Sample Report: Career Advancement Analysis

<table>
<thead>
<tr>
<th>Current Title</th>
<th>Count of Employees</th>
<th>Average Length of Time to Promotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production Assistant</td>
<td>7565</td>
<td>2.00</td>
</tr>
<tr>
<td>Senior Production Assistant</td>
<td>1345</td>
<td>5.24</td>
</tr>
<tr>
<td>Product Lead</td>
<td>567</td>
<td>8.67</td>
</tr>
<tr>
<td>Section Supervisor</td>
<td>24</td>
<td>12.54</td>
</tr>
<tr>
<td>Division Supervisor</td>
<td>13</td>
<td>15.24</td>
</tr>
<tr>
<td>Plant Manager</td>
<td>4</td>
<td>17.95</td>
</tr>
<tr>
<td>Operations Planning</td>
<td>2</td>
<td>8.56</td>
</tr>
<tr>
<td>District Sales Representative</td>
<td>15</td>
<td>12.76</td>
</tr>
<tr>
<td>Union Representative</td>
<td>1</td>
<td>24.50</td>
</tr>
</tbody>
</table>

This report provides insight into logical career paths for the position of production assistant, then calculates the average time to promotion (for those promoted). HR managers are able to follow career paths through the organization to assist employees with career planning. A next step might be to drill on a title within this report to view the career paths of specific individuals, or add new metrics like Average Salary or Number of Employees Managed.

COMMON BUSINESS QUESTIONS

- For each employee that began as a Production Assistant, what position do they currently hold?
- What is the average tenure by current position?
- What has been the career track of a particular employee?
- Are they progressing toward their goals?
- Who are all the employees that work in a particular business unit or geographic region?
- Who in my department has been an employee for five years? 10 years?
- What is this employee’s current home address?
- For the past five years, how has this employee rated in the “Skills Assessment” section of his/her annual performance review?
Benefits Administration Reporting

Benefits administration has traditionally been a function of Human Resource departments and includes reporting of employee insurance, paid time off, and other non-salary item data. Business intelligence, when applied to benefits administration, allows employees to view vacation accrual, stock plans, and flexible spending accounts over the Web without help from their HR representative. HR departments can also apply business intelligence to benefits reporting to ensure they are providing the appropriate benefits packages to their employees at competitive prices. As Human Resources departments increasingly move benefits administration to a self-service model, benefits administration applications are integrated with corporate portals and intranets for one-stop HR reporting and analysis.

Sample Report: Employee Benefits Profile and Status

This dashboard enables employees to see their current paid time off and benefit elections without the help of HR. Companies using intranets or portals can link this dashboard into existing projects to provide employees with real-time access to their HR profile. The next step would be to enable HR professionals to access this same employee information with enhanced drilling capabilities to assist users with questions, make updates to elections, and perform trend analysis across groups of employees.

COMMON BUSINESS QUESTIONS

- How many paid vacation days do I have remaining?
- Which healthcare insurance package am I signed up for?
- How many stock options has this employee been granted? What is the vesting schedule?
- Which employees have their five-year anniversary with the company this month?
- What is the average 401(k) contribution by employee?
- What was the corporation’s payment to 401(k) plans in 2006?
- What is the aggregate cost to the company of vacation days granted in the retention package?
- How many employees take advantage of the flexible spending option?
Time and Labor Management Reporting

Time and labor management applications track a wide range of employee details, from paid leave to billable time to vacation accruals. Combining data from both HR and finance allows HR professionals to perform analysis on staffing, revenue forecasting, and compensation impacts. Understanding utilization rates, contractor billing rates versus employee labor rates and overtime, and corporate overhead costs allows an organization to optimize labor expenses and set policy.

**Sample Report: Employee Utilization Rate Report**

This example colorcodes zones of employee utilization rates for a department. Managers from call centers to manufacturing use this type of analysis to ensure service levels, reward top performers, and coach underperformers. Further analysis might include trending of individual employee utilization, drilling to an employee’s time sheet, or performing predictive analysis to determine future staffing needs.

**Common Business Questions**

- What are the utilization rates of my employees?
- What is the average utilization rate this year?
- How many hours were billed in March?
- What portion of revenue is from billable employees?
- What is my employee forecast for the next quarter?
- Which employees attained their bonuses this year?
- What percentage of my employees are approaching overtime?
- When will my department hit overtime?
- What is my leave liability?
Sales forecast reporting and analysis provides visibility into a company’s sales pipeline, integrating information from sales, customer, and financial sources for a complete picture of sales performance. Business intelligence-enabled sales forecasts allow sales management to monitor and act on individual opportunities, more accurately forecast current and future period revenues, and understand the drivers that distinguish won versus lost deals. Executives can use graphical dashboards to quickly assess actual sales performance versus corporate targets and sales management forecasts. Marketing users can analyze lead progression through each stage of the sales cycle to quantify the effectiveness and revenue impact of marketing efforts. Business intelligence enables organizations to associate sales pipeline data with financial, marketing, and customer information to make informed, strategic decisions to improve sales effectiveness.

BUSINESS CHALLENGES SOLVED WITH BUSINESS INTELLIGENCE

Secure reporting to multiple layers of sales management. Enterprise-wide sales forecast reporting requires that each manager in the sales chain-of-command, each sales representative, each marketing and product analyst, and each executive has personalized access to sales pipeline information. Deploying reporting over the Web requires robust security to protect sensitive information and a scalable infrastructure to distribute reports to potentially thousands of geographically distributed sales force personnel.

Forecasting effectively through trend analysis and close probabilities. Sales managers and corporate executives demand accurate revenue forecasts that blend up-to-the-minute sales cycle information with historically realistic close probabilities. BI provides easy-to-understand graphical and tabular forecast reports as well as statistical analysis to enable predictive modeling.

Analyzing sales pipeline data from different business perspectives. Executives and managers need to understand the underlying trends that create sales opportunities and result in deal wins/losses. These trends may vary according to geography, sales representative characteristics (tenure, experience, education, and quota achievement), competitor presence, and product. Business intelligence provides reporting flexibility to view sales pipeline data along the attributes of choice, while providing direct access to the deal specifics when needed.

Combining sales force data with product, customer, and marketing data. Sales and marketing analysts require access to information beyond what typically resides in SFA (sales force automation) systems. Reports identifying product profitability, potential revenue by customer segment, and campaigns generating leads all require data from other corporate systems. BI integrates data from any number of corporate systems, allowing complete visibility into all variables affecting a company’s sales pipeline.

Reporting, analysis, and distribution of sales forecast data have unique user scalability, visualization, and security requirements. The following pages illustrate how MicroStrategy customers have successfully deployed sales reporting applications to thousands of end users, with meaningful analyses and reports that have driven increased sales efficiency for their organizations.
CUSTOMER VIGNETTES: IMPLEMENTING BI FOR SALES FORECAST

> CORPORATE EXPRESS

**Maximizing Revenue with an Award-Winning Predictive Analytics Application**

In June 2007, Corporate Express US received the 2007 Best Practices Award from The Data Warehousing Institute (TDWI) for a MicroStrategy-based business intelligence application. Corporate Express US took top honors in the predictive analytics category. TDWI’s Best Practices Awards program is designed to identify and honor companies that have demonstrated excellence in developing, deploying, and maintaining BI and data warehouse (DW) applications.

Corporate Express built a market basket application, leveraging MicroStrategy’s business intelligence technology, to improve its online business. The application looks at each item purchased and determines a list of complementary items to recommend to purchasers. The market basket application uncovered insightful new data about the items that customers typically purchase together, enabling Corporate Express to present these items as complementary offerings to online customers. As a result, the average order size for orders with the market basket pairings is more than twice the average order size for orders without pairings. In addition, the information has helped Corporate Express to better serve its customers, with a deeper understanding of purchasing preferences.

> U.S. BORAX

**Reporting on Marketing and Sales Trends Worldwide**

U.S. Borax, Inc., a member of the Rio Tinto group, supplies nearly half the world’s demand for refined borates – essential nutrients for plants, part of a healthy human diet, and key ingredients in fiberglass, ceramics, detergents, fertilizers, and wood preservatives. The company employs nearly 1,500 people worldwide and ships its products to customers in nearly 100 countries.


“Corporate Express is honored to receive this prestigious award from TDWI. Our MicroStrategy-based market basket application removes the guesswork and enables us to make analytically-based decisions that enhance the online customer experience.”

Jay Mutschler, Chief Operating Officer, Corporate Express US
Sales Pipeline Reporting and Analysis

Sales pipeline reporting focuses on the continual tracking and study of sales opportunities from raw lead to closed sale. Sales managers monitor key performance indicators to ensure marketing activities are generating the number, quality, and flow of leads necessary to meet sales targets and that sales cycles are progressing towards closure. Sales pipeline reports show the status and value of deals currently in the pipeline and probability-weighted forecasts. They also allow sales teams to drill to particular deal terms and conditions, and update material deal terms as negotiations occur. Business intelligence-enabled sales pipeline reporting not only generates and delivers these reports on a regular basis, but also allows managers to uncover competitive trends and performance anomalies by region, product, or customer segment.

Sample Report: Deal Progression by Sales Representative

<table>
<thead>
<tr>
<th>Opportunity Owner</th>
<th>Owner Role</th>
<th>Opportunity Name</th>
<th>Lead Source</th>
<th>Opportunity Size $</th>
<th>Expected Revenue</th>
<th>Probability (%)</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. Grant</td>
<td>South East - AE</td>
<td>LBC City Music</td>
<td>Cold Call</td>
<td>$5,310,164</td>
<td>$1,062,033</td>
<td>20%</td>
<td>236</td>
</tr>
<tr>
<td>S. Grant</td>
<td>South East - AE</td>
<td>Krazy Kites</td>
<td>Existing Customer</td>
<td>$2,155,489</td>
<td>$86,196</td>
<td>40%</td>
<td>127</td>
</tr>
<tr>
<td>A. Nobel</td>
<td>South East - AE</td>
<td>Sam’s Videos</td>
<td>Existing Customer</td>
<td>$3,450,000</td>
<td>$1,110,000</td>
<td>60%</td>
<td>78</td>
</tr>
<tr>
<td>A. Nobel</td>
<td>South East - AE</td>
<td>Dairy Shop, Inc.</td>
<td>Existing Customer</td>
<td>$654,214</td>
<td>$261,686</td>
<td>40%</td>
<td>16</td>
</tr>
<tr>
<td>M. Lawlor</td>
<td>EMEA UK - AE</td>
<td>Nigel’s Avionics</td>
<td>Incoming Call</td>
<td>$1,721,765</td>
<td>$344,353</td>
<td>20%</td>
<td>45</td>
</tr>
<tr>
<td>M. Lawlor</td>
<td>EMEA UK - AE</td>
<td>Kings Corner</td>
<td>Email Lead</td>
<td>$65,874</td>
<td>$52,699</td>
<td>80%</td>
<td>52</td>
</tr>
<tr>
<td>B. Morsch</td>
<td>West - AE</td>
<td>West Accountants</td>
<td>Incoming Call</td>
<td>$1,375,000</td>
<td>$275,000</td>
<td>20%</td>
<td>358</td>
</tr>
<tr>
<td>B. Morsch</td>
<td>West - AE</td>
<td>Writers Guild</td>
<td>Customer Referral</td>
<td>$1,197,938</td>
<td>$479,039</td>
<td>40%</td>
<td>152</td>
</tr>
<tr>
<td>T. Smith</td>
<td>Central - AE</td>
<td>Marketing Surrogates LLC</td>
<td>Email Lead</td>
<td>$254,187</td>
<td>$203,350</td>
<td>80%</td>
<td>32</td>
</tr>
<tr>
<td>T. Smith</td>
<td>Central - AE</td>
<td>PeopleNet</td>
<td>Partner Referral</td>
<td>$1,140,000</td>
<td>$684,000</td>
<td>60%</td>
<td>189</td>
</tr>
<tr>
<td>L. Zeiss</td>
<td>Partner - Germany</td>
<td>Munich Crystal Gmbh</td>
<td>Tradeshow</td>
<td>$368,745</td>
<td>$73,749</td>
<td>20%</td>
<td>68</td>
</tr>
<tr>
<td>L. Zeiss</td>
<td>Partner - Germany</td>
<td>Deutsche Air Gmbh</td>
<td>Email Lead</td>
<td>$56,234</td>
<td>$22,494</td>
<td>40%</td>
<td>99</td>
</tr>
</tbody>
</table>

This detailed sales pipeline report shows the weighted opportunity size for a sales team in the quarter selected. Dashboard capabilities include thresholds to highlight large revenue opportunities, as well as opportunities that are aged longer than the average, simplifying analysis by sales managers and executives. Further analysis can focus on which products/services are selling well, the effectiveness of individual sales people or regions, and sales results versus plan.

COMMON BUSINESS QUESTIONS
- What is the weighted opportunity size of a particular deal?
- How does the total weighted opportunity size in the pipeline compare with revenue forecasts?
- Has the duration of the average sales cycle increased?
- Which deals have been in the pipeline the longest?
- What is the most important reason for lost deals?
- What are the terms of a particular contract?
- What is the conversion rate of leads to closed deals?
- What is the total potential revenue of all opportunities with Customer X?
Companies use a variety of channels to promote products to customers. Retailers use stores, catalogs, and Web sites to merchandise their offerings. Technology companies depend on direct sales forces, OEM partners, resellers, and systems integrators to deliver products to customers. Channel analysis allows organizations to understand the effectiveness of various sales channels, gauge channel growth, and compare channel margins. By reviewing channel comparisons, sales, channel, and marketing managers can focus resources on building and maintaining the channels that best meet their customers’ sales and service needs. Basic channel analysis includes sales and margin performance by channel, trends in channel utilization over time, and comparisons of channel performance by customer segment. More advanced analysis enables users to drill to individual channel partners, optimize pricing by channel, or match channel supply to channel demand.

**Sample Report: Quarterly Sales Channel Analysis**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Direct</th>
<th>Internet</th>
<th>Telesales</th>
<th>Distributor</th>
<th>Annual Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>$6,340</td>
<td>$824</td>
<td>$536</td>
<td>$59</td>
<td></td>
</tr>
<tr>
<td>Q2</td>
<td>$4,378</td>
<td>$999</td>
<td>$649</td>
<td>$71</td>
<td></td>
</tr>
<tr>
<td>Q3</td>
<td>$5,430</td>
<td>$1,234</td>
<td>$802</td>
<td>$88</td>
<td></td>
</tr>
<tr>
<td>Q4</td>
<td>$4,598</td>
<td>$2,131</td>
<td>$1,385</td>
<td>$152</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$20,746</td>
<td>$5,188</td>
<td>$3,372</td>
<td>$371</td>
<td>$29,667</td>
</tr>
<tr>
<td>Sales Last Year</td>
<td>$19,086</td>
<td>$4,773</td>
<td>$3,103</td>
<td>$341</td>
<td>$27,303 Sales Last Year</td>
</tr>
</tbody>
</table>

**Direct and Internet Sales by Region**

This report details the total sales for each distribution channel over time and drills into the geographic sales breakdown for the direct and Internet channel. Understanding channel effectiveness helps Sales and Marketing analysts to determine the impact of promotions, ad spending, staffing, service, training, and distribution. Drilling further on this graph will reveal individual product sales by channel, sub-region, and month.

**Common Business Questions**
- Which channels are exceeding sales projections? Underachieving?
- Which channel(s) generate the most profit per transaction?
- Which channel has the highest growth rate year over year?
- In Region A, which channel do customers prefer?
- Through what channel are my most profitable customers buying?
- Which promotions have been the most effective in this channel?
- How does the price of Product Z vary by channel?
- Is one channel cannibalizing another?

**Key Performance Indicators**
- Revenue Growth Year over Year
- Profit per Transaction
- Price Variance b/n Channels
- Top Promotion by Channel
- Top 25 Products by Channel
- Margin by Channel
- % of Total Sales Sold Direct
- % Profit on Partner Sales
Sales Forecast

Competitor Analysis

Sales forecast reporting is not complete without a review of competitive forces in sales cycles, their effect on revenue, and their implications for product development. Sales executives identify competitive win/loss performance at the region, sales representative, and individual sales cycle level. Basic competitive reporting measures competitive presence during the sales cycle and the success rates against each competitor. More advanced analysis enables users to drill into sales cycles of individual sales representatives to assess effectiveness in competitive situations, review transaction detail including products and options sold, or analyze discount programs used against various competitors.

Sample Report: Competitive Activity by Quarter

<table>
<thead>
<tr>
<th>Primary Competitor</th>
<th>Quarter</th>
<th>Opportunities with Competitor Present</th>
<th>Wins vs. Competitor</th>
<th>% Wins vs. Competitor</th>
<th>Losses vs. Competitor</th>
<th>% Losses vs. Competitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wizard Corporation</td>
<td>2006 Q1</td>
<td>41</td>
<td>16</td>
<td>39%</td>
<td>22</td>
<td>54%</td>
</tr>
<tr>
<td></td>
<td>2006 Q2</td>
<td>56</td>
<td>30</td>
<td>54%</td>
<td>16</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>2006 Q3</td>
<td>22</td>
<td>4</td>
<td>18%</td>
<td>15</td>
<td>68%</td>
</tr>
<tr>
<td></td>
<td>2006 Q4</td>
<td>30</td>
<td>12</td>
<td>40%</td>
<td>12</td>
<td>40%</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td>149</td>
<td>62</td>
<td>42%</td>
<td>65%</td>
<td>44%</td>
</tr>
<tr>
<td>Sphynx Solutions</td>
<td>2006 Q1</td>
<td>14</td>
<td>11</td>
<td>79%</td>
<td>2</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>2006 Q2</td>
<td>23</td>
<td>7</td>
<td>30%</td>
<td>12</td>
<td>52%</td>
</tr>
<tr>
<td></td>
<td>2006 Q3</td>
<td>56</td>
<td>29</td>
<td>52%</td>
<td>25</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>2006 Q4</td>
<td>33</td>
<td>21</td>
<td>64%</td>
<td>10</td>
<td>30%</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td>126</td>
<td>68</td>
<td>54%</td>
<td>49%</td>
<td>39%</td>
</tr>
<tr>
<td>Pulsar Applications</td>
<td>2006 Q1</td>
<td>10</td>
<td>7</td>
<td>70%</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>2006 Q2</td>
<td>6</td>
<td>1</td>
<td>17%</td>
<td>3</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>2006 Q3</td>
<td>21</td>
<td>15</td>
<td>62%</td>
<td>7</td>
<td>33%</td>
</tr>
<tr>
<td></td>
<td>2006 Q4</td>
<td>15</td>
<td>9</td>
<td>60%</td>
<td>4</td>
<td>27%</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td>52</td>
<td>126</td>
<td>58%</td>
<td>16</td>
<td>31%</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td>327</td>
<td>160</td>
<td>49%</td>
<td>130</td>
<td>40%</td>
</tr>
</tbody>
</table>

This quarterly report of sales cycles against top three competitors allows competitive intelligence analysts, product managers, and sales management to measure competitive effectiveness. The report automatically highlights quarters where percentage wins and losses are significant. Next step analyses include sales representative wins versus losses, wins and losses in existing customers versus prospects, and average deal size for wins versus losses.

COMMON BUSINESS QUESTIONS

- What competitor activity have we seen across various accounts?
- Is there a trend in activity with Competitor A?
- Who are our Top 3 Competitors by number of opportunities present?
- How much revenue have we lost to our top competitor this year?
- How often do we win versus Competitor A?
- How often do we lose when Product X is being sold?
- What products were part of the contract offered Customer A?
Sales Force Performance Reporting

Sales Performance Reporting provides insight into expected and actual achievement of the members of the sales organization. Executives and sales managers can view dashboards summarizing sales representatives’ quota achievements, detailed reports on sales representatives’ pipelines, and benchmark reports that compare sales representative performance. Drilling to pipeline detail can reveal factors contributing to the over- and under-performance of regions and/or representatives. By constantly reviewing sales representative performance versus quota and benchmarked relative to relevant peers, sales management can proactively develop performance improvement plans for under-performing sales representatives and provide appropriate motivational recognition for top performers.

Sample Report: Sales Performance versus Plan

This is an example of a basic sales performance dashboard with detail on the performance of individual sales representatives in a particular region. Executives and Regional Sales Managers use this report to monitor individual employee performance within their region at a glance. A next level of analysis would be to drill into the individual sales representative sales to date, historical performance versus plan, and the pipeline to determine if any action is necessary.

Key Performance Indicators
- % of Target
- Opportunity Age
- Average Sales per Sales Representative
- Bottom 20% of Sales Representatives
- Top 10 Deals by Revenue
- Top 5 Opportunities
- Weighted Pipeline Revenue
- % of Quota
- Cost of Sales
- % Leads Converted to Sales

Common Business Questions
- Are sales representatives on track to meet their sales targets?
- What is the sales trend in the East Region?
- Who lost the most deals in terms of revenue? Number of deals?
- Who are the best performers in terms of percentage of opportunities closed?
- Who are my top 20% and bottom 20% sales performers over the last four rolling quarters?
- What products have the most sales opportunities over the last 24 months by geography?
- What lead channel is driving the most successful sales opportunities?
- What products are most of my sales people positioning?
- What is the most common product offered in a subsequent sales cycle?
Over the past few years, many companies have implemented operational customer relationship management (CRM) systems, and these companies are now analyzing the behavior of their customer base to plan and optimize marketing tactics and improve customer service programs. Using customer analytics, companies identify the tastes and preferences of particular target markets to create more relevant offerings and improve the efficiency of marketing dollars. With the growing availability and volume of customer data, including call center data, point-of-sale transaction detail, and credit or loyalty card identification, businesses can more easily determine what types of customers are buying what kinds of items, and which marketing tactics drive sales from each customer type. Additionally, customer service representatives can pull up individual customer information in real-time, allowing for more informed service and providing real-time suggestions for additional product or service sales tailored to the preferences of the customer.

**BUSINESS CHALLENGES SOLVED WITH BUSINESS INTELLIGENCE**

**Access a 360-degree view of each customer at any touch point.** To effectively personalize marketing and sales tactics, users need a complete view of a customer consolidated from any number of corporate systems. With the increased collection of customer-focused information and the growing need for transaction-level insight, companies rely on business intelligence to summarize terabytes of data while enabling access to individual customer detail.

**Segment, analyze, and profile customers for targeted marketing campaigns.** Marketing teams use a variety of analytics to segment customers by past behavior, demographics, and lifetime value, as well as gain an understanding of marketing effectiveness. Business intelligence provides a flexible and intuitive reporting environment to distill relevant marketing insight from a broad range of customer characteristics.

**Alert management to campaign and customer behavior changes.** Customer relationship managers and marketing teams alike depend on timely notification of customer and campaign events, like large customer deposits or purchases, and campaign responses rates. Proactive information delivery via Web, e-mail, or wireless device allows sales, service, and marketing personnel to improve customer relationships and build customer loyalty.

**Predict customer profitability.** Sophisticated customer calculations such as lifetime value help marketing departments determine how to invest marketing budgets to service and retain the most profitable customers. Business intelligence provides both the advanced analytics needed for profitability analysis and prediction and the information delivery capability to ensure customer profitability information is delivered to all sales and service personnel who interact with customers.
CUSTOMER VIGNETTES: IMPLEMENTING BI FOR CUSTOMER RELATIONSHIP MANAGEMENT

> BOOTS THE CHEMISTS

Analyzing Purchasing Behavior to Develop More Effective Personalized Marketing

Boots The Chemists uses the MicroStrategy Business Intelligence Platform to deliver improved analysis and reporting of loyalty data to a wide range of users. Part of the Boots Group Plc, Boots The Chemists is the UK’s leading health and beauty retailer and one of the best known names in the UK.

Boots utilizes MicroStrategy for a variety of applications, including basket analysis, customer segmentation, and direct marketing, using the vast amount of data collected from its Advantage Card loyalty program. By upgrading its MicroStrategy platform, Boots also provides more sophisticated analysis to its existing user base and allows more internal users to gain access to its core marketing database. The retailer has improved its one-to-one marketing efforts and increased the profitability and lifetime value of each customer. Boots also provides access to loyalty information through the MicroStrategy Web interface to external parties in its supply chain.

> NETFLIX

Analyzing Marketing and Movie Recommendation Data to Better Serve 6.8 Million Subscribers

In 2007, Netflix, Inc. selected MicroStrategy as its enterprise reporting and analysis standard. Netflix is the world’s largest online movie rental service.

Netflix will utilize MicroStrategy for reporting and analysis of financial data, marketing campaigns, and movie recommendations. With MicroStrategy, Netflix users will gain valuable insight into critical marketing data to evaluate marketing campaigns and personalized movie recommendation data, enhance its marketing programs, and better serve its subscriber base of 6.8 million members. MicroStrategy was selected by Netflix for its ease-of-use, robust reporting and analytical capabilities, and scalability for large databases.

“'The Web-based nature of MicroStrategy and its intuitive, customizable reporting allows us to roll it out to new groups of users quickly and easily. In the past, analysts were using MicroStrategy to extract insight from purchasing data, but now we are able to empower a wider range of business users with critical information to help make our individual customer propositions more focused and deliver competitive advantage in our market.”

Scott Sommerville,
Business Consulting Manager,
The Boots Company Plc

“We evaluated several other business intelligence products and found that MicroStrategy offers us the flexibility and scalability we need to support our growing business intelligence applications. We are impressed with MicroStrategy’s intuitive Web interface, which will enable our users to make strategic, analytically-based decisions to better serve our growing business.”

Wayne Peacock,
Vice President of Business Intelligence,
Netflix
Customer Segmentation Analysis

Customer segmentation analysis allows organizations to identify groups of like customers based on their transaction history and then study behavioral patterns within these groups. Armed with a better understanding of their customer base, marketing managers can design targeted marketing and service campaigns to reach specific customer segments with offers that are suited to their needs and preferences. Segmentation analysis has as inputs customer transactional, demographic, and psychographic data. Business intelligence provides statistical techniques and data mining algorithms to analyze any number of customer attributes to uncover patterns in behavior. Ad hoc analysis functions are seamlessly integrated with data mining to allow analysts to investigate the characteristics of uncovered segments and generate specific customer lists within each segment. These lists may feed campaign management systems, be used for calling campaigns, or feed Web site content management applications to serve up offerings relevant to the segment.

Sample Report: Customer Segmentation Visualization and Drill-down

This statistical scatter plot is a first step in segmentation analysis where data is mined for trends and patterns. A marketing analyst can perform this type of analysis using any number or combination of metrics to look for emerging patterns that can be used to segment customers. In this report, customer segments along age can be seen from the tighter groupings of dots. Further drilling into one of the segments reveals that a majority of these customers use a loyalty card when shopping. Clicking on the pie segment representing customers without a loyalty card will generate the associated customer mailing list.

COMMON BUSINESS QUESTIONS

- What is the current distribution of customers by demographic?
- How has the age distribution within our customer base changed over the past 10 years?
- What is the distribution of customers by lifetime value?
- What percent of my revenues are contributed by a given segment of customers?
- What are the revenue, profit, and margin contributions by customer profile?
- Which segment of customers responded best to our recent e-mail campaign?
- Which customer segment is our most profitable?
- Which campaign has been the most effective with Segment X?
- Is there a trend in buying behavior by segment?
Customer Profitability Analysis

Organizations use customer profitability analysis to identify the most valuable customers or customer segments to prioritize marketing, sales, and service investments. By studying profitability metrics such as lifetime value, repeat purchase rate, and churn rate, analysts can identify profitable segments, uncover defining characteristics of those segments, and target similar populations for acquisition. Similarly, retention programs may be created for particularly profitable customers. Business intelligence provides the statistical and data mining capabilities to calculate lifetime value, identify product affinities for cross-sell campaigns, and perform predictive analysis of profits resulting from additional marketing investment. Customer segments or individual customers may be further investigated through ad hoc analysis, lists of customer segments may be automatically generated, or alerting rules may be applied to customer segments to automatically notify relationship managers when profitable customers have executed a transaction.

Sample Report: Customer Profitability Segments by Channel

This customer profitability report analyzes customer profit for a selected segment by customer attributes. Marketing strategists and campaign managers use this type of analysis to understand which customer segments to target with campaigns and loyalty rewards programs so the most profitable customers are attracted and retained, and less profitable customers are not sought. A next step might be to analyze which products/services customers are buying, which channels they are utilizing, and which complementary products/services to offer with promotions.

**Key Performance Indicators**
- Profit by Customer Quartile
- Revenue per Customer Segment
- Attrition Rate
- % Variance in Profit
- Bottom 25% of Customers by Profit
- Top 15 Products by Profit
- Lifetime Value
- Dollars Spent per Customer
- Product Affinity Rate

**Sample Report: Customer Profitability Segments by Channel**

This customer profitability report analyzes customer profit for a selected segment by customer attributes. Marketing strategists and campaign managers use this type of analysis to understand which customer segments to target with campaigns and loyalty rewards programs so the most profitable customers are attracted and retained, and less profitable customers are not sought. A next step might be to analyze which products/services customers are buying, which channels they are utilizing, and which complementary products/services to offer with promotions.

**COMMON BUSINESS QUESTIONS**
- What is the breakdown of customer profitability segments by channel?
- What is the current profitability of highest quartile of customers in 2006?
- What are the most profitable customers buying?
- Who are our least profitable customers?
- Which products are most often purchased with the most profitable products?
- What services do our most profitable customers use?
- How do our most profitable customers prefer to be contacted?
- How much have we spent to attract our most profitable customers?
- What is the churn rate within the most profitable customer segment?
Customer Cross-Sell Analysis

Sales and marketing managers rely on cross-sell analysis to identify customers who might be interested in buying products and services that are complementary to products and services already bought. Cross-sell analysis begins with determination of which product pairs are often bought together by customers (product affinity) and then involves identifying which customers bought one but not both products. By identifying and targeting these customers, companies can reduce total campaign costs, increase response rates, and drive increased sales. Detailed, atomic-level capture and retrieval of every customer’s profile, preferences, and transaction history enables basic cross-sell analysis. More advanced analysis uses statistical and data mining techniques to identify product affinities, explore historical sales trends, and predict sales as a result of cross-sell campaigns.

Sample Report: “Market Basket” Analysis and Cross-Sell Campaign Results

This product cross-sell or affinity report shows the percent of “market baskets,” or total set of items purchased by a customer during any one time period, containing Product A that also contain Product “X”. Marketing analysts use this information to understand what products would be good candidates to market to customers who already own Product A. Those products with high affinity for Product A which also have a high cross-sell opportunity (top five of customer base who own Product A but not Product X) are good candidates. The follow-on report shows the results of the campaigns executed promoting Product E to customers who own Product A.

COMMON BUSINESS QUESTIONS
• Which products sell well together?
• Which products have an increasing sales momentum?
• What is the chronology of purchases?
• What are the characteristics of customers who have purchased both Product A and Product B?
• What discount was offered to customers who also bought Product B?
• What was the cost associated with a cross-sell campaign?
• Was a cross-sell offer presented to customers during the initial purchase process?
• What is the expected profit from up-sell opportunities this quarter?
Customer Acquisition, Retention, and Attrition Analysis

Characteristics of new, loyal, and lost customers are particularly important for companies to understand. Marketing analysts group customers into segments of recent new purchasers, high-volume purchasers, and non-purchasers using customer transaction data, and analyze the resulting segments to identify their common characteristics. Attributes of new customers provide the profile of a company's likely acquisition target market. Similarly, characteristics of lost customers may define less desirable market segments, or may reveal problems in customer service or product satisfaction. Improvements in retention programs are saving companies significant time and money – keeping existing customers buying is much less expensive than acquiring new customers. Predictive modeling of acquisition, retention, and attrition rates feeds the business planning and budgeting process.

Sample Report: Call Center Inbound Customer Calls

This dashboard enables managers to quickly review the effectiveness of retention strategies by projecting redemption and attrition rates based on offers extended to customers. Marketing, sales, and customer service departments use this type of analysis to judge the effectiveness of available retention offers. Next steps would be to add projected cost per offer to estimate the cost of each program, perform trend analysis on a single offer, or drill into attrition rate to reveal lost customer profiles to better target retention offers.

Common Business Questions

- Have the rates of customer attrition, retention, and acquisition changed over time?
- What is the correlation between customer loyalty and profitability?
- What is the impact of tenure on customer retention and attrition?
- What is the revenue loss attributable to customer attrition?
- What is the average revenue per new customer in the past year?
- Which campaigns attracted the most new customers?
- How effective have specific retention offers been?
- At current rates, what will our attrition rate be in six months?
Loyalty Analysis

Sales and marketing managers analyze customer data to identify profiles of loyal customers, track their behavior, and develop loyalty programs that maximize profitability. Segmenting customers by profitability and lifetime value allows marketing analysts to identify the best target for loyalty programs. Depending on the characteristics of the segment, loyalty programs are created and generated to keep top customers engaged and satisfied while limiting lost revenue. The effectiveness of loyalty programs is studied continuously to ensure that both of these objectives are being optimally met. Integrated predictive analysis capabilities allow marketers to run “what if” scenarios to further refine loyalty program terms and conditions, and provide input into the company’s budgeting and planning process.

Sample Report: Forecasted Loyalty Program Performance

<table>
<thead>
<tr>
<th></th>
<th>Total Frequent Flyer Miles Earned (000)</th>
<th>Total Frequent Flyer Miles Redeemed (000)</th>
<th>Change in Frequent Flyer Mile Liability (000)</th>
<th>$ Change in Frequent Flyer Mile Liability (000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005 Actual</td>
<td>777,147</td>
<td>116,572</td>
<td>660,575</td>
<td>$ 1,982</td>
</tr>
<tr>
<td>2006 Actual</td>
<td>950,257</td>
<td>114,031</td>
<td>836,226</td>
<td>$ 2,509</td>
</tr>
<tr>
<td>2007 Forecast</td>
<td>695,589</td>
<td>118,250</td>
<td>577,339</td>
<td>$ 1,732</td>
</tr>
<tr>
<td>2006-2007 Variance</td>
<td>-27%</td>
<td>4%</td>
<td>-31%</td>
<td>-31%</td>
</tr>
</tbody>
</table>

This report shows the common metrics used to assess the performance of a frequent flyer loyalty program. The chart allows the analyst to predict the results of the program given different projections of revenue per flight mile. Here, the analyst has predicted revenue per flight mile to decrease by 4%. The impact on the other metrics is automatically calculated, and negatively impacted areas are automatically highlighted in red. Next the analyst may drill to specific geographic reports to see if passenger traffic has changed materially, individual customer reports to determine who has stopped flying, or fare change reports to predict revenue per mile.

COMMON BUSINESS QUESTIONS

- Has our customer loyalty program been successful in generating new revenue?
- Who are my top 10 customers according to frequency of visits?
- What is the lifetime value of my top 25 customers?
- What customers have bought multiple products over time?
- Is there a relationship between the number of products held by a customer and the duration of the customer relationship?
- What is the relationship between customer satisfaction and duration of the customer relationship?
- What are the characteristics of customers who have cancelled a product in the last two years?
- Of loyal customers a year ago, who has stopped purchasing our products and services?
Campaign Analysis

Campaign analysis enables organizations to gauge the success of various campaigns by measuring campaign costs, leads generated, and leads converted to customers. Campaign analysis begins by trending campaign costs and targets over time, calculating the return on investment for executed campaigns, and measuring the variance in lead generation and costs against goals. Using statistical techniques to identify characteristics of top-performing campaigns, customer and product buying affinities, and profiles of converted customers, future campaigns can be optimized for more targeted customer segments with more targeted product offers. In combination with campaign management tools, these analyses are being automated, with feedback from executed campaigns improving offers and generating prospect lists for follow-up campaigns.

Sample Report: Call Center Inbound Customer Calls

Customer Acquisition Campaign
Channel Effectiveness
Quarter: 1

<table>
<thead>
<tr>
<th>Channel</th>
<th>$ Spent</th>
<th>Leads Target</th>
<th>Leads Generated</th>
<th>Variance in Lead Generation</th>
<th>Targeted Cost per Lead</th>
<th>Actual Cost per Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Banner Ads</td>
<td>60,000</td>
<td>1,000</td>
<td>849</td>
<td>-15%</td>
<td>$ 89.00</td>
<td>$ 70.67</td>
</tr>
<tr>
<td>+ Magazine Reader Response Card</td>
<td>95,000</td>
<td>1,500</td>
<td>1,384</td>
<td>-8%</td>
<td>$ 66.67</td>
<td>$ 68.64</td>
</tr>
<tr>
<td>+ Direct Email</td>
<td>75,000</td>
<td>1,600</td>
<td>1,822</td>
<td>14%</td>
<td>$ 46.88</td>
<td>$ 41.16</td>
</tr>
<tr>
<td>- Search Engine Sponsorships</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Stain Removal”</td>
<td>10,000</td>
<td>150</td>
<td>170</td>
<td>13%</td>
<td>$ 66.67</td>
<td>$ 58.82</td>
</tr>
<tr>
<td>“Cleaning Supplies”</td>
<td>10,000</td>
<td>150</td>
<td>164</td>
<td>9%</td>
<td>$ 66.67</td>
<td>$ 60.98</td>
</tr>
<tr>
<td>“Spot Removal”</td>
<td>10,000</td>
<td>150</td>
<td>153</td>
<td>2%</td>
<td>$ 66.67</td>
<td>$ 65.36</td>
</tr>
<tr>
<td>AVERAGE</td>
<td></td>
<td></td>
<td></td>
<td>3%</td>
<td>$ 61.70</td>
<td>$ 60.94</td>
</tr>
</tbody>
</table>

This campaign analysis report measures the effectiveness of tactics through various marketing channels and highlights results that show under- and over-performance. The outline format allows analysts to quickly review details of individual tactics in a single channel. Additional analysis reveals the quality of leads generated from each tactic, either by revenue closed or opportunities generated in the sales pipeline, or shows period-over-period performance trends.

Common Business Questions

- How effective were the channels used for the customer acquisition campaign?
- What is the most cost-effective marketing campaign by interaction type?
- What is the monthly trend in interactions, purchases, and response rates by customer segment?
- Who is likely to buy only if contacted in person?
- What percentage of all transactions contains at least one promotional item?
- How do the sales volumes compare between promotional and non-promotional periods?
- Which age segment is most likely to respond to a reduced price promotion?
- What were the sales and inventories each week of each promotion?
- Is our marketing strategy impacting profitability and retention as predicted?
Customer Service Analysis

Customer service analysis investigates customer interactions with an organization, including point-of-sale, service delivery, and follow-on support, to ensure customers are being serviced well. Executives and marketers monitor service and satisfaction levels over time to measure business effectiveness in retaining and attracting customers. Summary reporting shows service levels at customer touchpoints, tracks issue resolution rates, and graphs period-over-period changes in customer complaints, returns, or inquiries. More detailed analysis drills into service metrics by agent, location, and time, calculates cost of service, and predicts future needs for staff, services, and training.

Sample Report: Customer Inquiry Trend Report

This customer service report highlights trends in the number of inbound customer support cases and their resolution status. Customer service managers use this analysis to gauge customer satisfaction and performance over time. Additional analysis on the types of cases reported, product or service enhancement requests, and response rate detail reveals opportunities for improvement.

COMMON BUSINESS QUESTIONS

- What is the trend in customer complaints this quarter?
- Where are the bottlenecks that cause me to miss service level targets?
- What is the distribution of complaints by complaint type, salesperson, and region?
- What is the average time for a customer complaint to be resolved through a call center?
- What percent of customers are satisfied with their customer service level?
- What is the customer satisfaction rating of the top 20% of customers?
- What complaints are correlated with a particular product?
- Are call centers or online help centers more effectively addressing customer needs?
Customer Scorecards

Customer scorecards are “at-a-glance” reporting mechanisms that provide insight into the health of a customer relationship. Scorecard contents vary and are typically customized to the needs of an organization. Scorecards include both a comprehensive view of a single customer and a bird’s eye view of trends across a company’s customer base. Scorecards help align executives, sales representatives, and marketing managers to focus on the key drivers of profit and long-term customer relationships. Scorecards give users the ability to view data from multiple data sources in a single, intuitive format – combining tables, charts, and graphics. More advanced users can drill into the scorecard to understand transaction detail, review profitability, or monitor interactions.

Sample Report: Scorecard for Individual Customer

This customer scorecard offers a quick snapshot of an individual customer relationship, recommended products for cross-sell, and customer profitability. Sales professionals, customer service representatives, or marketing analysts would use this information to make decisions when preparing for a customer meeting or actively serving a customer. Next steps in this analysis would be to develop plans to cross-sell to this customer, analyze trends in individual product balances and payments, or research the trend in the customer’s credit worthiness.

Common Business Questions

- What has been the migration of customers across revenue bands over time?
- What is the churn rate within the most profitable customer segment?
- What is the distribution of new and existing customers for the current year?
- What are the average acquisition costs for all customers per quarter?
- What is the monthly trend in counts of active, new, lost, and retained customers?
- What products does Customer X own?
- How do this year’s customer satisfaction levels compare to last year’s?
- What is the regional distribution of the most profitable customer segment?
Product sales analysis, most commonly used by retailers, enables the continuous monitoring of point-of-sale data to uncover sales trends, investigate product demand, and optimize merchandising strategies. Various levels of analysis, from summary reporting to statistical trending, are required by executives, store managers, product managers, and marketing analysts, as well as external suppliers who provide materials or finished goods. Business intelligence makes sense of the growing volume of transactional data by identifying trends and opportunities that create competitive advantage for companies that know and understand their sales drivers.

**BUSINESS CHALLENGES SOLVED WITH BUSINESS INTELLIGENCE**

*Understand which products are selling.* The ability to gain a detailed knowledge of where, when, and why specific products are selling ensures optimal stocking and merchandising, and maximizes sales. Business intelligence provides an easy-to-use interface for complex product mix analysis and statistical data mining for a complete picture of sales patterns and trends.

*Develop strategies to detect and mitigate fraud.* While fraud is one of the largest costs some businesses incur, it is being uncovered and minimized using business intelligence. Business intelligence not only allows fraud detection through statistical analysis, but also provides profiling capabilities for identifying high probability areas of fraud to prevent loss before it happens.

*Analyze the effectiveness of programs and promotions.* Sales and marketing managers require the ability to analyze the effectiveness of existing programs to optimize their marketing spend and better merchandise their products. Scheduled dashboard reporting combined with the transaction-level drill down reveals at-a-glance results with instant access to the underlying facts.

*Alert managers to potential lost sales.* Executives and sales managers cannot constantly monitor data from point-of-sale systems – there is too much data to sift through for even the most data-savvy managers. Comprehensive BI platforms provide alert-based reporting to notify managers and suppliers of inventory short falls, delivery problems, and sales anomalies.
CUSTOMER VIGNETTES: IMPLEMENTING BI FOR PRODUCT SALES

> HALLMARK CARDS, INC.

Distributing Performance Insight Across Various Channels, Product Groups, and Business Units

Hallmark Cards, Inc. has expanded its use of MicroStrategy software for enterprise-wide reporting and analysis. Hallmark, based in Kansas City, is known throughout the world for its greeting cards and related personal expression products.

MicroStrategy’s integrated business intelligence platform supports a wide range of reporting and analysis applications for Hallmark, providing insights into business performance across the company. Retail and sales productivity applications provide company-wide insight into product performance across various channels, product groups, and business units. MicroStrategy-based applications also analyze the effectiveness of consumer marketing campaigns, and consumer market basket and cross-buying behavior.

> LOWE’S COMPANIES

Using a BI Center of Excellence to Realize Significant Benefits

Lowe’s, the second-largest home improvement retailer in the world, has a primary data warehouse containing more than 20 terabytes of data and has grown by more than 20 percent per year over the past few years. The company’s BI environment contains industry-leading technology from MicroStrategy, Teradata, Informatica, and IBM. There are more than 30 full-time professionals and contractors dedicated to building a BI Center of Excellence at Lowe’s, with 25 reporting and analysis applications.

The MicroStrategy implementation at Lowe’s, called DART (Data Access and Reporting Tool), provides employees greater insight into key performance metrics. More than 150,000 reports are run each week, and Lowe’s employees from multiple business areas use the data to manage inventory, improve margins, review market specificity, and identify sales opportunities. Lowe’s also uses BI to analyze demographic attribute data to better anticipate the products that its customers will buy.

“MicroStrategy allows us to understand how recent product innovations, such as our ‘Cards with Sound’ line are performing in the marketplace. The scalability and usability of MicroStrategy enables us to distribute performance information throughout the organization so our business users can focus on our mission of delivering products and services that enrich people’s lives.”

Paul Wolters, Business Intelligence Manager, Hallmark Cards, Inc.

“Lowe’s is committed to information-driven decision making. We have used decision support and data warehousing for more than 13 years and have invested heavily in improving our data warehouse and business intelligence programs. As a result of using the MicroStrategy platform, Lowe’s is realizing significant benefits through improved merchandising decisions, more timely responses to information requests, cost reduction initiatives, enhanced employee productivity, and better service to our customers.”

Steve Stone, Senior Vice President and Chief Information Officer, Lowe’s Companies
Category Performance Analysis/Category Management

Category performance analysis, also often referred to as category management, provides insight into merchandise performance by product, category, geography, and vendor. Product, store, and channel managers analyze sales performance to understand which products and categories are selling well and which are selling poorly, in which geographies and stores, during which time periods. Just this basic level of knowledge allows managers to optimize their product mix, ensure inventory levels are appropriate, and offer specific product selections demanded locally by consumers. Using more advanced features of business intelligence, marketers are able to identify statistically significant product relationships (which products sell well together, which products sell well at the POS) and optimize merchandising strategies through “what if” analysis and predictive modeling.

Sample Report: Geographic Product Trends

This report shows overall changes in sales volume by region for an ice cream manufacturer. Sales, product, merchandising, and marketing managers can see at-a-glance which territories require attention. By drilling into the flavor sales distribution for underperforming regions at the region, flavor, or store level, managers can identify factors contributing to under- or over-performance and correct or replicate tactics.

COMMON BUSINESS QUESTIONS

- Which regions are experiencing the most growth in Product A sales?
- What are my top selling products?
- What other products are selling at the same time as my top seller?
- What is the contribution to sales of my top products?
- Which products have declining sales momentum?
- How have sales of Product A changed year over year?
- What items did Customer X buy in her last transaction?
- What is the annual sales trend of each product?
- What is the profit per unit for Product A?
Inventory Analysis

The continuous analysis of product inventory helps an organization match supply to demand, saving money in idle inventory and making money by preventing lost sales. Product, sales, and logistics managers monitor important inventory indicators like consumption, turnover, returns, and material movements in order to minimize inventory while still ensuring adequate product supply exists to satisfy demand. First-order inventory analysis consists of reporting current inventory status, analyzing inventory levels by location, and notifying managers of shortages via alerts. Business intelligence can also quantify the monetary impact of inventory shortfalls on sales, predict future inventory needs, and automate the reorder process based on demand forecasts.

Sample Report: Sales and Inventory Forecast

<table>
<thead>
<tr>
<th>Distribution Center</th>
<th>Inventory as of Today (BOH)</th>
<th>Sales Last Month</th>
<th>Sales This Month Last Yr</th>
<th>Projected Sales for This Month</th>
<th>Inventory Surplus (Projected EOHI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>100</td>
<td>66</td>
<td>35</td>
<td>51</td>
<td>50</td>
</tr>
<tr>
<td>Southeast</td>
<td>180</td>
<td>200</td>
<td>210</td>
<td>205 (25)</td>
<td></td>
</tr>
<tr>
<td>Northcentral</td>
<td>60</td>
<td>40</td>
<td>80</td>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>Southcentral</td>
<td>225</td>
<td>325</td>
<td>300</td>
<td>313 (88)</td>
<td></td>
</tr>
<tr>
<td>Rocky Mountain</td>
<td>175</td>
<td>155</td>
<td>215</td>
<td>186 (10)</td>
<td></td>
</tr>
<tr>
<td>Northwest</td>
<td>150</td>
<td>60</td>
<td>90</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>Southwest</td>
<td>320</td>
<td>315</td>
<td>425</td>
<td>370 (50)</td>
<td></td>
</tr>
</tbody>
</table>

This report links sales forecasts and inventory levels to ensure the right products are available in the right distribution centers to support sales demand. Sales and Distribution Managers use this report to reallocate existing stock, proactively route current orders to high-demand regions, and place new bike orders. Beginning-on-hand (BOH) and end-on-hand (EOH) are common measures of inventory levels at the beginning and end of a time period. A next step would analyze projected inventory surplus over time, drill to another product to see if multiple products need to be rerouted, or create “what if” sales and inventory scenarios.

Common Business Questions
- How much is the inventory of Product XYZ worth?
- What products are in danger of stock out?
- What is the inventory capital effectiveness?
- What impact are my current sales having on my inventory plans?
- What is the trend for inventory turns by product type? Color? Size?
- What are the trends in returns and what impact will this have on inventory?
- What can I do to decrease inventory turns?
- What are my projected warehouse space requirements?
Merchandising Analysis

Merchandising analysis allows a company to improve the planning, placement, and presentation of products for identified target markets, with the goal of optimizing the product mix to drive traffic and profitability. Sales, product, and store managers monitor the impact of merchandising attributes like product placement, packaging, and shelf-space area on metrics such as product sales and profitability. Additionally, understanding what, when, and where specific segments that customers buy enables more effective store design, better product mix, and better placement of products relative to each other. Business intelligence also provides statistical tools to identify product affinities (which products sell well together) and predictive models that can be used to forecast sales quantities.

Sample Report: Merchandising Optimization

This combination report illustrates the product category affinity along with the sales trends for numerous display locations in a store. By performing “Market Basket Analysis,” product sales, brand, and store managers can determine optimal product placement across a retail environment. Next steps are to investigate trends across regions, analyze sales of products where film is complementary, and drill to SKUs stocked at each location to determine which type of film is selling best.

COMMON BUSINESS QUESTIONS

• How do I increase sales with the current product mix?
• How do I manage the increasing number of products (#’s of SKUs)?
• What are the sales trends and results with different product/service placements?
• What are the market trends by geography for identical products?
• What is the sales impact of packaging variations?
• How do I optimize my shelf space given the store configuration?
• How do I increase sales of my most profitable products?
• Which products need to be localized to suit international markets?
• How can I alter the store layout to increase traffic through the electronics department?
Fraud Analysis and Loss Prevention

Fraud and theft are major cost components in retail environments, where large numbers of employees and customers have easy access to products and even the cash receipts of the business. By understanding what is normal and what is anomalous in daily operations, regional, store, and risk managers can identify and proactively address fraudulent behavior to minimize loss. Loss prevention results in reduced operating costs, increased profits, and better managerial controls across the organization. Business intelligence allows real-time detection of pre-defined fraud patterns and consequent notification by e-mail, page, or wireless device to proper authorities. Statistical and data mining functionality enables fraud patterns to be uncovered and intricate profiles created for future detection, as well as predictive analysis of loss.

Sample Report: Refund Fraud Analysis by Payment Category

This report compares refund rates of different stores with respect to the mean to show potential areas of fraud. Here, Store 1 is significantly above average in its cash refunds, signaling an employee or group of employees is likely stealing cash from registers. Regional, store, and risk managers use this type of report to spot unusual activity, and drill into suspect stores to show refunds by employees, time of day, and register ID to narrow down the likely source of the fraud.

**Common Business Questions**
- What types of sales have the most fraudulent returns?
- Where in my supply chain is most of the anomalous behavior occurring?
- Which products are subject to the most fraud?
- What is the total cost of the loss associated with cash refunds?
- Is most of my fraud risk from employees or customers?
- What are the details of the transaction immediately following a return?
- Which employees are associated with Fraud Pattern x?
Product Scorecards

Product scorecards provide “at-a-glance” insight into key product and service drivers. Brand and product managers are able to track and analyze factors that influence product profitability and optimize product mix across channels, lines, categories, and brands. Scorecards are comprised of various quantitative and visual components, ranging from tables and graphs to more symbolic performance indicators such as speedometers, gauges, traffic lights, and color-coded flags. Scheduled delivery of product scorecards allow managers to see up-to-date performance indicators in highly visual formats, allowing instant identification of risk areas. Business intelligence delivers interactive scorecards through e-mail, Web, and Microsoft® Excel, with complete integration of reporting, ad hoc analysis, data mining functions, and access to transactional systems to provide the most efficient environment for detection, analysis, and action.

Sample Report: Weekly Product Scorecard

This product scorecard is delivered every Monday to a product manager. The scorecard contains the key performance indicators pertaining to this particular product, and allows the product manager to see trends in product sales, achievement of planned sales and margin targets, distribution metrics by geography, and trends in customer call volumes. Each of these areas may highlight potential problems that the product manager should address. The scorecard is the entry point for the product manager to dive into the underlying details – in this case, to see cost of sales breakdown and distribution center points.

<table>
<thead>
<tr>
<th>COMMON BUSINESS QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What is the forecast versus plan unit demand for the next four weeks?</td>
</tr>
<tr>
<td>• Display the breakdown of fixed and variable product costs for the quarter as a bar chart with percentage and currency.</td>
</tr>
<tr>
<td>• Show me product sales compared to the same period last year, with increases over 10% highlighted in green and decreases over 10% highlighted in red.</td>
</tr>
<tr>
<td>• Provide a stoplight on my scorecard if customer calls related to my product are above average for the week.</td>
</tr>
</tbody>
</table>
Discounts and Promotions Analysis

Companies often use discounts and promotions to entice customers to buy goods or services or increase the size of a sale by bundling items together. Discounts often drive sales but may have a deleterious effect on profitability if price elasticity models have not been well-formed. Unfortunately, increased sales often don’t offset promotion costs. Analyzing discounts and promotions enables sales and marketing managers to identify the most relevant and successful offers for any product or customer segment. Sales discount and promotion analysis starts with trending of campaign success over time by product, channel, or offer, and then calculates the return on investment for executed campaigns. More advanced analysis uses statistical techniques to identify product affinities (products that sell well together) for promotions, to profile customer segments likely to be attracted by specific discounts, and to predict ROI for future campaigns.

Sample Report: Q1 2007 Promotional Effectiveness

This report analyzes profit attributable to promotions, the cost of the promotion, and promotion ROI. Sales and marketing managers use this report to understand sales impact, determine the effectiveness of promotional efforts, and make decisions on future campaign design. Further analysis would reveal those products with statistically significant changes in sales as a result of each promotion, sales increase by customer segment by promotion, or profit optimization varying dollar spend by channel.

Common Business Questions

- What marketing tactics are driving sales?
- How much discounting are we doing relative to last year?
- What discounts are most popular? Least popular?
- What promotions are most popular? Least popular?
- What are the geographic discount/promotional trends?
- What is the cost of the discount/promotion compared to the increase in sales?
- What promotions are resonating with different customer segments?
- Which sales people are more reliant on discounts/promotions?
- Which promotions most significantly impact sales for my most profitable products?
The predictable, reliable, and efficient movement of materials, components, and finished products is critical to the success of every manufacturer, supplier, distributor, and retailer. The importance of optimizing this supply chain has made supply chain analysis one of the fastest growing business intelligence application areas. The proliferation of automated tracking systems, supply chain transaction systems, and electronic data interchange (EDI) systems has contributed to the rapid increase of data related to supply chain management. Business intelligence solutions are required to turn these rapidly growing data stores into actionable information, allowing managers and analysts to understand inventory trends, track vendor performance, analyze distribution network efficiency, and respond more quickly and accurately to demand feedback from the marketplace.

BUSINESS CHALLENGES SOLVED WITH BUSINESS INTELLIGENCE

Deploying vendor scorecards to manage inventory. Executives and trading partners require a summary view of vendor performance versus plan for key business metrics such as on-time and complete shipments. Scorecards integrate data elements from multiple sources into visual representations of performance, such as graphs and gauges, to provide a complete picture of supply chain performance at-a-glance.

Develop strategies to detect and mitigate fraud. Statistical quality control, process capability studies, and acceptance testing allow managers to assess the quality of supply inputs and select the most reliable sources. Users require an easy way to investigate complex manufacturing and distribution processes using a full range of analytical and data mining functions.

Proactive alerts of product and material shortages. Production, sales, and supplier managers need to review inventory levels broken down by both in-transit and finished goods location on a programmatic and alert basis. Information must be delivered according to user-defined business rules to their device of choice (Web, e-mail, pager) through data-driven thresholds and schedules.

Sharing information securely with a distributed user community. Supply chain and back office operations have a diverse reporting population spanning geographies and time zones. Information assets must be tightly secured, while allowing access via the Web, e-mail, and Microsoft® Excel so the proper individuals can see the data for which they have privileges.
CUSTOMER VIGNETTES: IMPLEMENTING BI FOR SUPPLY CHAIN AND OPERATIONS

> GT NEXUS

Identifying Ways for Companies to Reduce Costs and Improve Operational Efficiencies

In 2006, GT Nexus selected MicroStrategy to power the customer-facing analytics and reporting capabilities on its Global Trade and Logistics portal. The GT Nexus portal is an on-demand technology platform that is used by importers, exporters, transportation carriers, suppliers, banks, and other partners to manage goods that are moving around the world.

The GT Nexus system captures and stores hard-to-get data associated with global supply chains, and then fuels a range of Web applications that can be used by constituents to lower supply chain costs and improve control. MicroStrategy will help GT Nexus to deliver a wide range of analytics and reporting capabilities to its customers, which include Home Depot, Kmart, Xerox, Weyerhaeuser, and American Eagle Outfitters.

By embedding MicroStrategy’s business intelligence technology into its portal, GT Nexus enables customers to analyze their global supply chains and the performance of their partners. With this data, GT Nexus customers can identify weak spots in their supply chain and make analytically-based decisions that can reduce costs, improve operational efficiencies, and enhance business performance.

> KB TOYS, INC.

Adding to the Bottom Line at the Nation’s Largest Mall-Based Specialty Toy Retailer

In 2007, KB Toys, Inc. selected MicroStrategy as its business intelligence platform. KB Toys, Inc. is the nation’s largest mall-based specialty toy retailer.

Initially, KB Toys plans to use MicroStrategy for reporting on key merchandising and supply chain metrics to improve the management of inventory from its vendors to its stores. MicroStrategy will be used to manage product life cycles, track customer demand, and monitor inventory levels through dashboards and exception reporting, enabling KB Toys to enhance customer service levels while improving return on inventory.

“We are evolving our approach to buying, planning, product allocation, and store operations,” said Frank Andryauskas, Chief Information Officer at KB Toys. “MicroStrategy will enable us to better understand inventory trends, track product demand, and analyze the efficiency of store operations.”

“Our customer base is very diverse and a one-size-fits-all approach to reporting and analytics does not work for us. By embedding MicroStrategy, we give our customers the ability to build their own unique reports and analytics. We conducted a thorough assessment of BI products and it was apparent, early on, that MicroStrategy’s technology was ahead of the game in many key areas. We were particularly impressed with MicroStrategy’s full-featured Web interface with drag-and-drop interactivity to meet the needs of our diverse user population. Scalability to handle volumes of data and an integrated architecture for a seamless user experience were two other important decision criteria for us.”

Andy Stinnes,
VP of Products and Corporate Strategy,
GT Nexus

“We selected MicroStrategy because of its scalability, user-friendly Web interface, and robust reporting features that help us to make fact-based decisions which impact our bottom line. MicroStrategy provides the ability for hundreds of concurrent users to quickly retrieve and analyze large volumes of detailed data and efficiently monitor performance of key business metrics.”

Tim Armstrong,
Director of Analytical Business Solutions,
KB Toys
Supply and Demand Planning

Supply and demand planning is continuously performed during the manufacturing and distribution process to ensure planned production will meet forecasted demand and the appropriate amount of raw materials and goods are available for production runs. Beyond basic analysis of current supply and past demand, supply and demand planning requires predictive modeling, statistical forecasting, and the ability to drill into demand detail by region, customer segment, or product category. Shortfalls in supply can be detected or predicted, with automatic alerts sent to managers or triggering a reorder process.

Sample Report: Product Demand and Component Inventory

<table>
<thead>
<tr>
<th>Titanium Driver: Product Demand and Component Inventory</th>
<th>Period: Q3 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecast Demand (units)</td>
<td>Comp 1</td>
</tr>
<tr>
<td>Product A</td>
<td>2855</td>
</tr>
<tr>
<td>Product B</td>
<td>4712</td>
</tr>
<tr>
<td>Product C</td>
<td>1372</td>
</tr>
<tr>
<td>Total Components Required</td>
<td>11340</td>
</tr>
<tr>
<td>Inventory on Hand</td>
<td>13688</td>
</tr>
</tbody>
</table>

This sample report tracks forecasted demand to required product components. Combining the forecasted demand with actual inventory on hand, the report highlights areas where inventory shortfalls are present. This type of report can be generated daily and e-mailed to a Production Manager or be part of a dashboard as a starting point for planning production. HTML links in the report allow users to drill into components to determine why there is a shortfall, identify the suppliers, and quote prices of the items required in order to meet production schedules. Reorder links allow immediate action to ensure correct supply.

COMMON BUSINESS QUESTIONS

• What materials are used in the production of each product?
• How many products by type did we sell over the last five years?
• What was the geographic demand for our products?
• How many suppliers do we rely on for our products?
• Does regional manufacturing capacity align with demand?
• How is demand impacted by seasons?
• Which material(s) have the most price volatility by vendor?
• What customers will demand which products? Are there customer segment patterns?
Manufacturing Scheduling and Production Planning

Manufacturing planning encompasses the hourly/daily/weekly/monthly production and machine schedules across multiple plants or production lines to meet orders or forecasted demand. Success hinges on accurate materials planning. Manufacturing managers, product managers, and purchasing analysts review metrics such as production capacity and current inventories to plan appropriate production schedules, ensure raw material availability, and make plant reallocation decisions when appropriate. Basic analysis includes real-time status of plant utilization and trends in market demand versus planned production runs. Advanced analysis includes hedging analysis on commodities used in production, forecasting of machine output, and linear programming to optimize production resources.

Sample Report: Utilization and Capacity Analysis

This report summarizes current production for Model XYZ and combines it with the product demand forecast showing a potential shortfall at the current output levels. This type of report helps managers optimize fixed investments in plant and equipment by keeping them running near 100% of capacity and working to meet market demand. A next level of analysis would be to drill into the production status of Plant 2 to determine what other products are being produced there, the margins on these products versus Model XYZ, and market demand for the products being produced at Plant 2.

COMMON BUSINESS QUESTIONS

• What are the current machine utilization rates?
• Which plants/lines are operating with excess capacity?
• What percent of forecast is represented by planned manufacturing capacity?
• How much product(s) do we need to produce to meet existing demand?
• How much product(s) do we need to produce to meet anticipated demand?
• What are the planned machine/line downtimes and how will they affect product supplies?
• Which products are scheduled to have a major update this year? Will we be able to meet the new demand?
Regulatory Management

Many industries must operate in tightly regulated environments with government reporting and substantiation of filings critical to product and service delivery. Manufacturers, transportation, defense, consumer goods and food, pharmaceutical, telecommunications, financial services, insurance, and utilities are just a few of the industries that must furnish regulatory information. Engineering, manufacturing, and legal professionals perform analyses on performance against predetermined and internal standards. Business intelligence provides basic analyses such as performance versus standard levels as well as statistical significance of acceptance or failure rates.

Sample Report: Clinical Trial Results, HiPAA Compliant

<table>
<thead>
<tr>
<th>Patient Code</th>
<th>Gender</th>
<th>Group</th>
<th>6 Mo. Effectiveness Rate</th>
<th>Patient Reported Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1102</td>
<td>M</td>
<td>Test</td>
<td>90%</td>
<td>None</td>
</tr>
<tr>
<td>P1105</td>
<td>F</td>
<td>Control</td>
<td>N/A</td>
<td>None</td>
</tr>
<tr>
<td>P1107</td>
<td>F</td>
<td>Test</td>
<td>70%</td>
<td>Nausea</td>
</tr>
<tr>
<td>P1110</td>
<td>F</td>
<td>Test</td>
<td>95%</td>
<td>Slight nausea on one occasion</td>
</tr>
<tr>
<td>P1117</td>
<td>M</td>
<td>Test</td>
<td>50%</td>
<td>Nausea, sleeplessness, cough</td>
</tr>
<tr>
<td>P1118</td>
<td>M</td>
<td>Control</td>
<td>N/A</td>
<td>Cough</td>
</tr>
<tr>
<td>P1122</td>
<td>F</td>
<td>Test</td>
<td>88%</td>
<td>Sleeplessness</td>
</tr>
<tr>
<td>P1124</td>
<td>M</td>
<td>Control</td>
<td>N/A</td>
<td>None</td>
</tr>
<tr>
<td>P1125</td>
<td>F</td>
<td>Test</td>
<td>86%</td>
<td>Occasional nausea</td>
</tr>
</tbody>
</table>

This report shows a sample of the results of a clinical trial for a new drug compound, and is a good example of a report containing mostly qualitative data. Due to HiPAA and confidentiality requirements, patient identities have been masked, but a Clinical Manager can see who received a trial drug versus placebo, the patient’s gender, and reported side effects. A next level of analysis is drilling into the details on the side effects for each patient during monthly visits -- the same as drilling into individual transactions with other analyses. While this example addresses regulatory needs in the pharmaceutical industry, the concept can easily be adapted to meet the needs of a manufacturer with regulatory requirements.

COMMON BUSINESS QUESTIONS
• What is my product’s performance versus approval standards?
• What clinical trials are currently underway?
• What is the user acceptance rate of a new product?
• Are any products in noncompliance with government or industry standards?
• How do trial results vary from expectations?
• Can these results be extrapolated to the general user population?
• What are the countries of origin for all my production components?
• What countries have we sold products to? Where are service calls coming from?
Order Fulfillment Analysis

Logistics and operations managers analyze total processing time from order to fulfillment, the variances between the original order and the delivered goods, and the business impact of goods that are returned, damaged, or delivered incorrectly. The customers’ ability to track the status of orders adds to satisfaction and ensures orders are accurately and promptly fulfilled as placed. Reporting on the status of orders, tracking the time to fulfillment across product categories and geographies, and analyzing the variance in delivery costs versus standards are first steps in order fulfillment reporting applications. Advanced analyses include trending performance against service levels, drilling into individual orders across fulfillment metrics, and performing time series analyses on fulfillment steps to optimize results.

**Sample Report: Order Fulfillment Performance by Region**

<table>
<thead>
<tr>
<th>Region</th>
<th>Cases Ordered (000)</th>
<th>% Delivered on Time</th>
<th># Cases Damaged (000)</th>
<th>% Cases Damaged (000)</th>
<th>Lost Sales Due to Stockouts (000)</th>
<th>Trend in Performance vs. Last Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>4.587</td>
<td>98%</td>
<td>11.8</td>
<td>0.257%</td>
<td>$ 97.74</td>
<td>📈</td>
</tr>
<tr>
<td>Latin America</td>
<td>5.645</td>
<td>97%</td>
<td>12.1</td>
<td>0.358%</td>
<td>$169.35</td>
<td>☢</td>
</tr>
<tr>
<td>Europe</td>
<td>6.587</td>
<td>96%</td>
<td>20.1</td>
<td>0.356%</td>
<td>$263.48</td>
<td>⬤</td>
</tr>
<tr>
<td>Asia</td>
<td>4.198</td>
<td>92%</td>
<td>6.6</td>
<td>0.157%</td>
<td>$335.84</td>
<td>☢</td>
</tr>
</tbody>
</table>

This report summarizes information on the fulfillment results across regions for a particular product, highlighting anomalies, and providing a visual snapshot of performance trends. An operations analyst will use this report to determine regional performance and determine if steps need to be taken to mitigate lost sales and damaged goods. From the links embedded in the report, users may look at regions to determine causes for lost sales, including supply shortages, impact of new packaging, or variation in performance of delivery methods – rail, sea, air, or truck.

**COMMON BUSINESS QUESTIONS**

- What is the average total order processing time?
- What percent of orders were delivered on time?
- What customers have the most delivery delays? The least?
- What are the trends in fulfillment across product line and geography?
- How many items are in the backlog?
- What is the average delivery time?
- Was there a variance between the quantity ordered and the quantity delivered?
- Which orders are in transit?
- Do we have delivery confirmation for all of today’s deliveries?
Key Performance Indicators

- Inventory Turnover Rate
- Price Variance to Order
- # Stockouts Prevented
- Days Until Reorder
- Vendor Quality Rating
- Product Delivery Date Variance
- Vendor Quality Ranking
- Top 5 Stockout Suppliers

Strategic Sourcing Analysis and Vendor Scorecards

Manufacturers analyze vendor performance at all entry points in the supply chain. Vendor scorecards allow both a customer and vendor to compare performance against agreed upon accuracy and delivery time service levels. Logistics, supply, purchasing, finance, and manufacturing analysts and managers use this information to analyze the customer-supplier relationship and ensure that the correct products and materials get to the right place at the right time – saving time and money. Standard analysis focuses on tracking inventory levels, ranking vendor performance, and showing the status of orders. Optimization techniques include predicting vendor performance, based on past behavior, proactive alerts of potential stockouts and delivery status, and optimizing scenarios for different sourcing mixes.

Sample Report: Vendor Performance Scorecard

<table>
<thead>
<tr>
<th>Vendor: Oceans Soda Company</th>
<th>Reporting Period: Q2 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>% Complete</td>
</tr>
<tr>
<td>TARGETS</td>
<td>≥ 95%</td>
</tr>
<tr>
<td>April</td>
<td>542</td>
</tr>
<tr>
<td>May</td>
<td>654</td>
</tr>
<tr>
<td>June</td>
<td>602</td>
</tr>
</tbody>
</table>

This vendor scorecard highlights summary performance of a single vendor, Ocean Soda Company, for the desired reporting period with thresholding (red) used to show where performance deviates from Service Level Agreements (SLAs). Sales, purchasing, logistics, and finance professionals both internally and at the vendor organization will use this scorecard to monitor performance.

COMMON BUSINESS QUESTIONS

- How many times have orders been placed with this vendor in the last year?
- How many different employees ordered from this vendor?
- What is the total dollar value spent with this vendor year over year?
- What is this vendor’s on-time delivery percentage?
- What is a vendor’s performance against predetermined performance metrics?
- Has this vendor been late to deliver in the past?
- Who are the top three low-cost bidders for a particular product?
- What components have the most price volatility over the last two years?
- Who are the suppliers with the most price volatility?
Quality Control

To ensure finished products adhere to an organization’s quality standards while minimizing costs, companies use business intelligence to develop product and component sourcing scenarios. Managers and analysts in manufacturing, procurement, and customer service rely on quality reporting to determine if a production run needs to be halted, to determine if a vendor is having increased quality problems, or to identify customers who need to be contacted for a recall. Understanding which products need to be recalled by production time or run, trends in quality, and the costs of defects are first-order analyses in quality control. Statistical sampling and analysis on defect rates, proactive alerts sent to production managers when quality thresholds are exceeded, and the ability to track the location of any component in a product in real-time are the functions enabling companies to achieve true competitive advantage.

Sample Report: Quality Control Metrics by Product and Supplier

<table>
<thead>
<tr>
<th>Product</th>
<th>Total 2006 Production</th>
<th>2006 # Defects</th>
<th>Percent Defects</th>
<th>Production Cost/Item</th>
<th>Total $ Loss on Defects</th>
<th>Defective Part ID</th>
<th>Defective Part Vendor</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC</td>
<td>1,254,648</td>
<td>25,094</td>
<td>2%</td>
<td>$55.26</td>
<td>$1,261,208</td>
<td>456</td>
<td>Jones Corp.</td>
</tr>
<tr>
<td>DEF</td>
<td>45,789,633</td>
<td>1,373,689</td>
<td>3%</td>
<td>$25.29</td>
<td>$34,740,595</td>
<td>123</td>
<td>Smith Corp.</td>
</tr>
<tr>
<td>GHI</td>
<td>3,246,323</td>
<td>162,316</td>
<td>5%</td>
<td>$30.54</td>
<td>$4,942,527</td>
<td>789</td>
<td>Smith Corp.</td>
</tr>
<tr>
<td>TOTALS</td>
<td>50,290,640</td>
<td>1,561,099</td>
<td>3%</td>
<td>$40,944,330</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This report demonstrates a simple quality analysis that highlights the material defect rates and costs to the organization, with details of one of the production runs. With user-defined thresholds, a financial, operations, or supplier analyst can perform this type of analysis to see if there are immediate problems that need to be addressed or in preparation for discussions with a vendor on the quality of product supplied. A next level of analysis would be to drill into individual production runs to determine if a particular product run had a statistically significant defect rate, or drill into the details of all products supplied by a particular organization that may be having quality problems.

Common Business Questions
- What percentage of product is defective?
- How many of each product had to be discarded for defects?
- What dollar value did the discarded inventory represent?
- What is the standard deviation of quality ratings?
- What suppliers are linked to defective products?
- What are my defect rates compared to this same period last year?
- What is the trend in product quality?
Network Optimization

Developing a robust manufacturing and supply distribution network requires a large capital investment. Manufacturing managers monitor machine utilization rates, capacity versus demand, and load versus defect rates to optimize production lines. In communications networks, information technology managers continuously monitor switches, channels, and the overall network to determine usage rates, balance load, and plan capacity investments. Metrics often tracked include infrastructure availability, up-time, and utilization. Predictive analysis is used to determine future infrastructure requirements, and “what-if” analysis shows the tradeoffs of different configuration and load scenarios.

Sample Report: Network Performance and Downtime

This report demonstrates the trend in the number and duration of plant/network outages over a 16-month window. The positive trend can be the result of a number of factors including a completed modernization effort, increased training, or more proactive maintenance. By viewing this report, an operations, information systems, or production analyst can see the amount of time lost due to outages and drill into the months where there were anomalies. Typical follow-on analysis includes comparing ROI of upgrade/training/maintenance (costs versus increased product sales or productivity measures), drilling into the cause and location of outages, or implementing a proactive notification process whenever there is downtime.

COMMON BUSINESS QUESTIONS

- What is the network utilization versus downtime?
- What percent of capacity is this location operating at on average?
- What is the trend in volume over the past year?
- How much downtime do we experience per month?
- What is the maximum traffic our network can handle?
- What machines require maintenance today? This week? This month?
- What machines are nearing the end of their productive life?
- What will our required network investments be next year?
Call Center Analysis

Because of their low cost per touch, call centers have become an increasingly important customer touchpoint for many businesses. Changes in call volumes, response times, and satisfaction levels are all key to understanding the efficiency and efficacy of call center operations. Customer service and telecommunications managers analyze these metrics to determine staffing levels, plan for infrastructure investments, and ensure proper customer satisfaction levels. Basic reporting delivers scorecards on call volume, response times, and call duration. Advanced analysis involves individual call detail access, predictive modeling on staffing and infrastructure requirements, and analysis of call volume by geography, customer segment, or product ownership.

Sample Report: Call Duration Trend Report

This report shows the breakdown of incoming call volume for a user selected time period. By drilling into any of the pie sections, an operations or customer service analyst can determine the types of calls in the duration segment. Further analyses of interest might be departments to which calls were routed, individual agent activity records, or call duration for different customer segments.

Common Business Questions

- What is the trend in call volume this month?
- What is my blocked call rate?
- How does the average response time compare to this month last year?
- How much capacity will be required next year if we continue at this rate?
- What products/services are inbound callers most frequently requesting?
- Which employees take the most calls?
- Which employees spend the longest time on the phone per customer?
Companies study Web site visitor activity to understand customer and prospective buyer interests, improve Web site design and navigation, and increase the profitability of the online sales process. By tracking and analyzing Web traffic patterns, site navigation, page views, and transactions, online marketers can design more compelling Web sites and give visitors better incentive to buy and return. With the low switching costs present on the World Wide Web, companies know that a visitor’s experience must offer enough value to induce repeat visits. Companies rigorous in their analytical approach to online merchandising and/or sales are realizing lower marketing costs, higher online revenue, and improved customer loyalty.

**BUSINESS CHALLENGES SOLVED WITH BUSINESS INTELLIGENCE**

*Investigate online visitor behavior trends to optimize Web site design.* Web site design must be optimized to induce specific visitor actions, for example, completing checkout once items have been added to a shopping cart. BI allows paths of interest to be defined and tracked, related pages to be grouped into a single defined interest area, and customer data to be combined with Web traffic data to better understand the behavior of particular visitor segments.

*Combine offline and online customer detail to uncover marketing opportunities.* Combining Web log information with customer information from other corporate systems provides marketers a unique opportunity to connect customers to page views, allowing offers to include items specifically known to have been viewed by the customer. Business intelligence not only enables this identification process, but automatically creates and delivers targeted offers through the Web, e-mail, and wireless devices.

*Understand marketing campaign effectiveness through tracking of online results.* Marketing campaigns with Web-based calls-to-action can be effectively tracked near-real-time through Web data analysis. E-mail, Web site, and other banner ad campaigns tagged with campaign identifiers can be tracked from click-through to response to closed sale. Understanding the relative effectiveness of list targets, creative design, and offer content allows marketers to optimize their marketing spend.

*Provide real-time alerting of Web traffic performance indicators and anomalies.* Web site managers must be notified immediately when a Web site goes down. Other traffic pattern and transaction changes can indicate navigation problems, merchandising errors, and personalization errors. BI provides statistical measures of traffic, conversions, and page views relative to average for a defined time period, and automatically alerts managers of anomalies based on predefined thresholds.

MicroStrategy’s unique ability to handle the growing volumes of Web data and combine it with data from across the enterprise have won the business of many of the world’s most prestigious online companies, including Yahoo! and eBay. The following pages review some of the most common areas of Web data analysis and the benefits BI offers when applied to Web log data.
CUSTOMER VIGNETTES: IMPLEMENTING BI FOR WEB SITE ANALYSIS

> eBay

Providing Excellent Query Performance for a Rapidly Growing Multi-Terabyte Data Warehouse

eBay relies on the MicroStrategy platform to analyze the ongoing performance of the many different categories of products and services for sale on its Web sites. On any given day, there are more than 16 million items listed on eBay across 27,000 categories.

> PRICELINE.COM

Enhancing Marketing Campaigns to Help Drive Business Growth

Priceline.com has chosen MicroStrategy to anchor key marketing reporting capabilities. Priceline.com is an Internet-based travel service that offers leisure airline tickets, hotel rooms, rental cars, vacation packages, and cruises.

Priceline.com selected MicroStrategy to enhance its analytic and reporting capabilities and provide greater insight into key operational data for search engine marketing. With the ability to obtain and analyze granular data, Priceline.com marketing analysts will have actionable data that they can use to improve the return-on-ad-spend of its search engine marketing campaigns.

MicroStrategy was selected by Priceline.com for its Web-based platform, data and user scalability, advanced reporting and analytical capabilities, and integrated metadata for automated maintainability.

> YAHOO! INC.

Providing a Complete Understanding of Online Interactions

Recently, MicroStrategy customer Yahoo! expanded its use of the MicroStrategy Business Intelligence Platform. For these new applications, MicroStrategy was selected primarily because of its powerful analytics.

Yahoo! uses MicroStrategy’s software for customer analysis, sales analysis, advertising assessments, and transaction activity reviews. Yahoo! Inc. is a leading provider of comprehensive online products and services to consumers and businesses worldwide. Yahoo! is the No. 1 Internet brand globally and the most trafficked Internet destination worldwide.

“eBay selected MicroStrategy because of its exceptional user scalability and its ability to support advanced reporting and analysis. MicroStrategy also provides excellent query performance with our rapidly growing multi-terabyte data warehouse.”

Brad Peterson, CIO, eBay

“We were looking for a business intelligence product that provides excellent query performance against our rapidly growing multi-terabyte data warehouse. With MicroStrategy, our marketing team will have the information they need to make strategic, data-driven decisions to help drive business growth.”

Ron Rose, CIO, Priceline.com
Web Traffic Analysis

The analysis of Web traffic metrics such as page views, visitor count, visit duration, and click-throughs provide the most basic understanding of the attractiveness of a corporate Web site. Traffic trends are often first reviewed for the Web site homepage and then for various major Web subsections, portals, and microsites. Time-based traffic comparisons highlight cyclical, seasonal, or day-of-the-week visitation variations that can influence when new Web content should be posted. Generally, Web traffic analysis provides a good first order indication of the effectiveness of a company’s marketing message, since increased market awareness tends to drive additional Web visits. Business intelligence additionally provides an early warning system for Web site availability or design problems, as it is able to alert Web administrators when traffic is unusually light. Overall, Web traffic analysis provides a better understanding of the level of interest in a company and its offerings, helping marketers tune their messages to increase prospect and customer visitation.

Sample Report: Web Traffic Trends by Content Section

This report shows the trend of Web site visitors for different sections of a corporate Web site, overlayed with some major corporate and marketing events. Marketing managers can determine the impact of specific events on overall market interest, the effectiveness of campaigns on driving behavior, and the impact of Web design on navigation paths. This overall picture leads to detailed visitor analysis of competitor, customer, prospect, and investor segments, conversion to leads, and page stickiness. Proactive alerting of significant out-of-trend session numbers can also notify Web system managers of potential service issues.

COMMON BUSINESS QUESTIONS

• What is the trend in the number of unique visitors across corporate Web sites over the past year for a particular visitor segment?
• Are there any unusual, non-seasonal changes or trends that need further investigation?
• What are the peak hours for Web traffic each weekday versus the weekend?
• Is there a correlation between changes in Web site design and Web site visitor activity?
• Which landing page has been the most active over the past year?
• Is there a correlation between Web site performance and visitor retention and/or attrition?
• What is the online behavior of the most valuable segment of my offline customers?
Web Visitor Analysis

In order to better understand the needs of prospects and customers, companies often profile individual Web visitors and analyze their visitation patterns. This visitor analysis and segmentation is used to drive marketing campaigns, such as targeted cross-sell or up-sell campaigns, as well as Web site design optimization. Accurate visitor profiling requires a combination of input variables, from length of stay to page views to paths, combined with customer characteristics and transactional history from the Web site and other customer touchpoints. “Stickiness” is a common term used to characterize the attractiveness of a site, section, or page, and is measured by the average number of page views, session duration, and page depth. In addition, Web visitors identifiable through login or cookies may be tied to customer data from other systems to create personalized campaigns by customer segment or by individual customer. Business intelligence applied to Web visitor analysis is being used to feed campaign management systems for these highly personalized and automated campaigns.

Sample Report: Web Visitor Breakdown by Segment

In the above example, even though the number of total visitors to this corporate Web site has decreased from Q1 to Q2, the number of repeat visitors, termed “friends,” is increasing. This segment, now familiar with the corporate message, may be ready for a purchase solicitation. The fact that visits by “strangers,” or new visitors, are decreasing suggests prospecting tactics are becoming less effective.

COMMON BUSINESS QUESTIONS

• What is the success rate in converting “visitors” to “repeat visitors” to “customers”?
• Which ad banners and other referrals are attracting the most qualified visitors?
• Is my defined target audience actually the majority of visitors I’m attracting?
• How often do my online customers also purchase offline?
• How effectively am I driving my offline customers to transact through my Web site?
• What is the demographic profile of visitors who have viewed Product X?
• What products are being viewed by customers who have purchased Product Y?
Web Navigation Analysis

A corporate Web site typically consists of many navigation paths and hierarchies stemming from the site’s homepage. Whether the primary goal of the Web site is information dissemination, lead generation, or actual product purchase, the paths of a Web site may be monitored to determine whether Web visitors are taking a desired course of action. Web navigation analysis studies the relative attractiveness of a Web site’s navigation paths to optimize site navigation structures and to determine customer interest in specific content. Navigation analysis combines individual and aggregate visitor activity, key-word search results, banner ad clicks, purchase transaction activity, and page view duration. Optimization of site navigation is having a direct impact on conversion of “lookers to bookers,” increasing the number of visitors that either complete a transaction or stay engaged long enough to receive a desired message.

Sample Report: Campaign Effectiveness on Product Views

This report shows the Web page navigation paths for a selected week. A Web marketer or editor can use this information to determine the logic taken by visitors to their Web site and the popularity of Web pages. Further analysis can determine the pages that are exited most often, most popular calls to action invoked by page, and referring source to the page.

COMMON BUSINESS QUESTIONS

- How effective are each of my banners at attracting visitors to my Web site?
- How are first time visitors using my site versus repeat visitors?
- How can I optimize page sequences for best conversion rates?
- What pages cause visitors to drop out?
- Is my image placement creating enough click-throughs to justify the real estate use?
- What is the average download size and time of my pages?
eCommerce Analysis

Web site transaction analysis (also commonly referred to as eCommerce analysis) provides insight into the effectiveness of the online sales transaction process. In industry parlance, companies try to convert “lookers to bookers” and use business intelligence to identify points of customer attrition in the online transaction process. Analysis of the abandonment rate of shopping carts is the first step in optimizing the checkout process to convert more sales to closure. “Market-basket” analysis of products being bought together allows marketers to execute targeted follow-up campaigns to customers or present in real-time banners offering products associated with items in a shopper’s cart. Given the low switching costs of Web purchasing, a site must create value for the visitor, provide him with relevant, personalized information, and make it easy to move from browsing to buying.

Sample Report: Abandonment During Checkout Process

<table>
<thead>
<tr>
<th>Customer</th>
<th>Email</th>
<th>Opt-in</th>
<th>Product(s) Abandoned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jesse Smith</td>
<td><a href="mailto:jsmith@jj.com">jsmith@jj.com</a></td>
<td>Y</td>
<td>Blue sandals</td>
</tr>
<tr>
<td>John Johnson</td>
<td><a href="mailto:john@mail.com">john@mail.com</a></td>
<td>Y</td>
<td>Red silk scarf, umbrella</td>
</tr>
<tr>
<td>Haley Wilson</td>
<td><a href="mailto:haleywilson@co.com">haleywilson@co.com</a></td>
<td>N</td>
<td>Silver tie, cuff links</td>
</tr>
<tr>
<td>Michelle Wright</td>
<td><a href="mailto:mwright@mail.org">mwright@mail.org</a></td>
<td>Y</td>
<td>Leather boots</td>
</tr>
<tr>
<td>Jim Patterson</td>
<td><a href="mailto:patterson@nc.net">patterson@nc.net</a></td>
<td>Y</td>
<td>Socks, black socks</td>
</tr>
<tr>
<td>Earl Greene</td>
<td><a href="mailto:earl@mail.com">earl@mail.com</a></td>
<td>N</td>
<td>White tennis shoes</td>
</tr>
</tbody>
</table>

The following report illustrates the number of people who abandoned the online shopping process at various stages. Each stage can be defined by the user to include any number of pages and links in the purchase process. Web marketers can analyze this information to make decisions about Web site design based on abandonment rates. A next step would be to develop targeted campaigns (electronic and postal) to individuals who abandoned the buying process, promoting items contained in their shopping carts.

COMMON BUSINESS QUESTIONS

- How many people abandon their shopping cart before check-out?
- What was my gross conversion rate of lookers to bookers?
- Which are my best selling products online?
- Which are my most profitable products sold online?
- Which online products sell well together?
- What percentage of up-sell opportunities closed?
- What percentage of online products were bought as a result of an e-mail promotion or campaign?
- For a visitor viewing a certain item, which items should be merchandised on the page based on past visitor buying behavior?
## INDEX

### FINANCE, 28
- Accounts Receivable and Payable Reporting and Analysis, 33
- Balance Sheet Reporting and Analysis, 30
- Cash Flow Analysis, 32
- Financial Budgeting and Forecasting, 34
- Profit and Loss/Income Statement Analysis, 31
- Risk Management, 35

### HUMAN RESOURCES, 36
- Benefits Administration Reporting, 42
- Career Path Reporting and Analysis, 41
- Compensation Reporting and Analysis, 39
- Employee Expense Reporting, 40
- Headcount Trend Analysis, 38
- Time and Labor Management Reporting, 43

### SALES FORECAST, 44
- Channel Analysis, 47
- Competitor Analysis, 48
- Sales Force Performance Reporting, 49
- Sales Pipeline Reporting and Analysis, 46

### CUSTOMER RELATIONSHIP MANAGEMENT, 50
- Campaign Analysis, 57
- Customer Acquisition, Retention, and Attrition Analysis, 55
- Customer Cross-Sell Analysis, 54
- Customer Profitability Analysis, 53
- Customer Scorecards, 59
- Customer Segmentation Analysis, 52
- Customer Service Analysis, 58
- Loyalty Analysis, 56

### PRODUCT SALES, 60
- Category Performance Analysis/Category Management, 62
- Discounts and Promotions Analysis, 67
- Fraud Analysis and Loss Prevention, 65
- Inventory Analysis, 63
- Merchandising Analysis, 64
- Product Scorecards, 66

### SUPPLY CHAIN AND OPERATIONS, 68
- Call Center Analysis, 77
- Manufacturing Scheduling and Production Planning, 71
- Network Optimization, 76
- Order Fulfillment Analysis, 73
- Quality Control, 75
- Regulatory Management, 72
- Strategic Sourcing Analysis and Vendor Scorecards, 74
- Supply and Demand Planning, 70

### WEB SITE ANALYSIS, 78
- eCommerce Analysis, 83
- Web Navigation Analysis, 82
- Web Traffic Analysis, 80
- Web Visitor Analysis, 81

### CUSTOMER VIGNETTES
- Boots The Chemists, 51
- Charming Shoppes, Inc., 29
- Corporate Express, 45
- Darden Restaurants, Inc., 37
- eBay, 79
- GT Nexus, 69
- Hallmark Cards, 61
- KB Toys, Inc., 69
- Lowe’s Companies, 61
- Netflix, 51
- Priceline.com, 79
- State of Tennessee, 29
- The University of Miami, 29
- U.S. Borax, 45
- Yahoo!, 79
The future of business intelligence is limitless.